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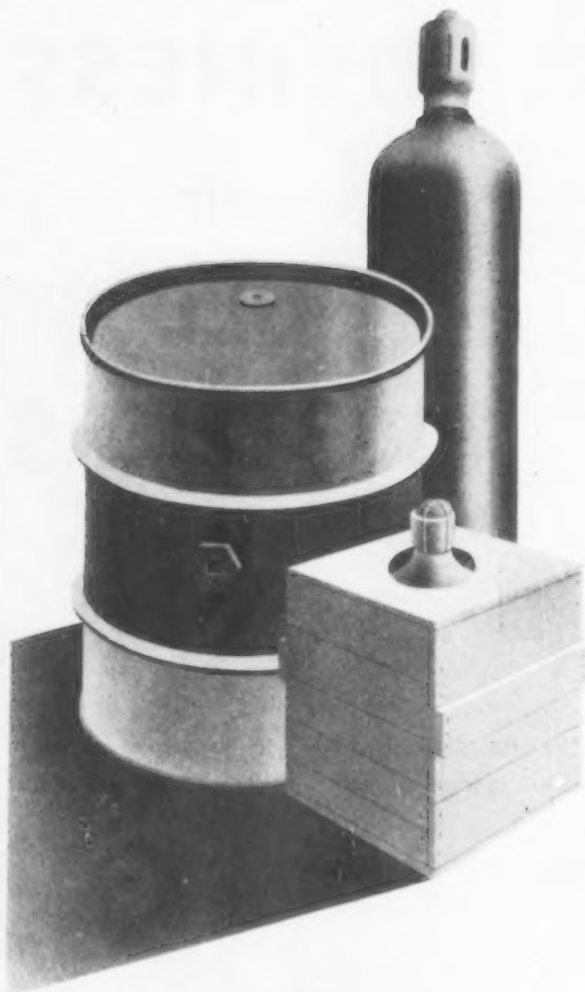
January, 1943

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3

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Volume XIX

Number 1

SOAP

and

SANITARY CHEMICALS

Reg. U. S. Pat. Office

JANUARY
1943

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"INDEX"

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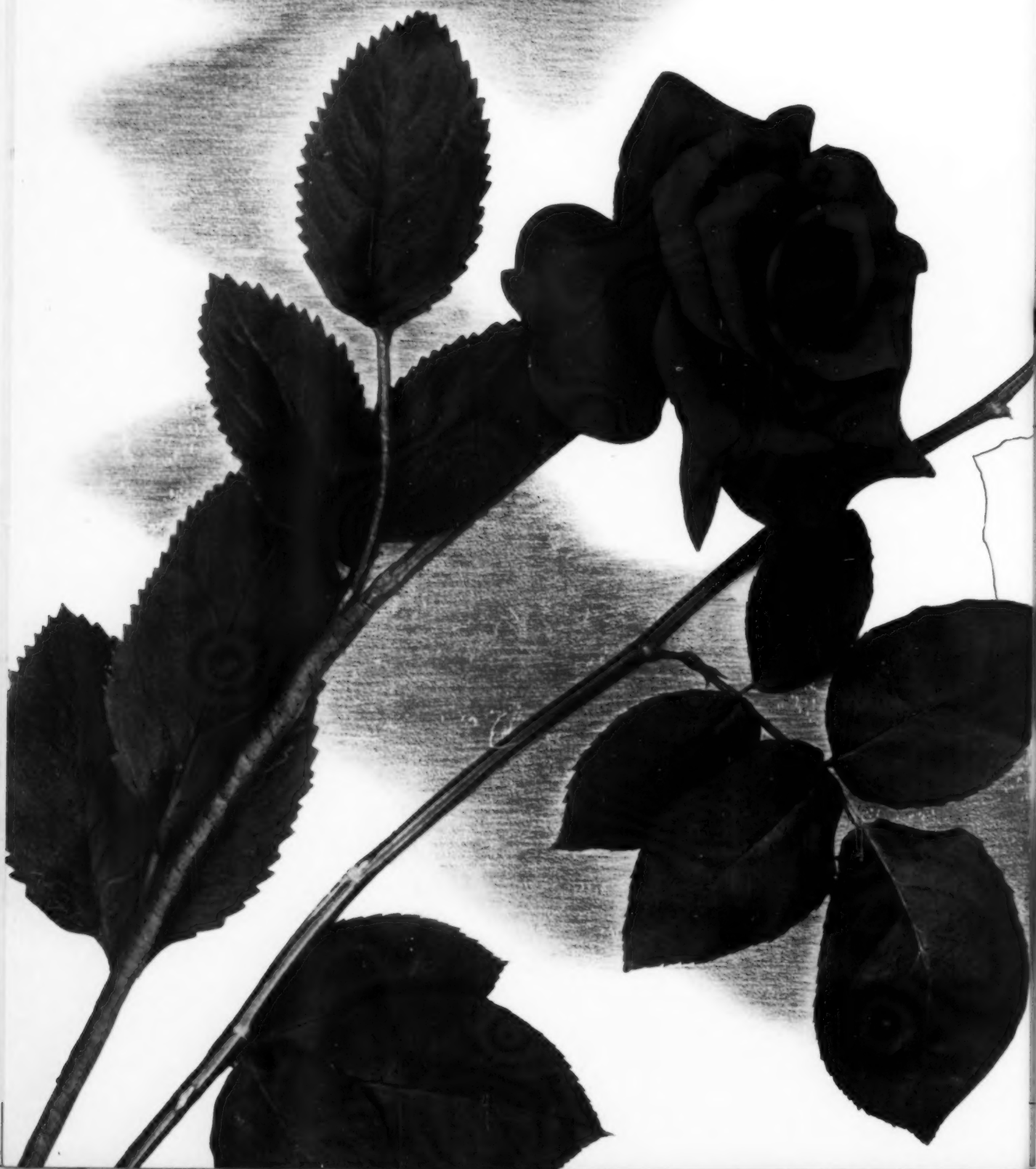
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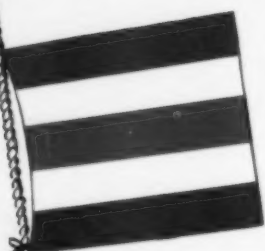
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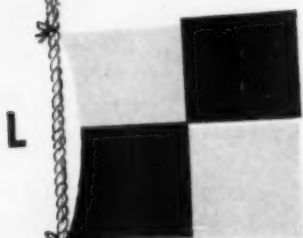
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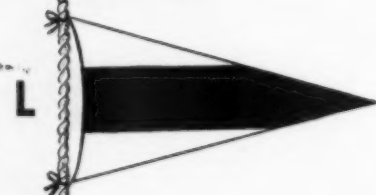
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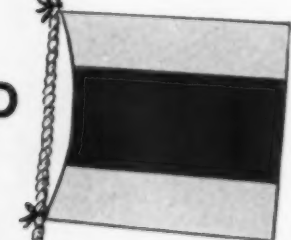
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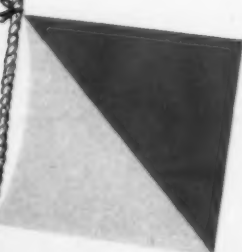


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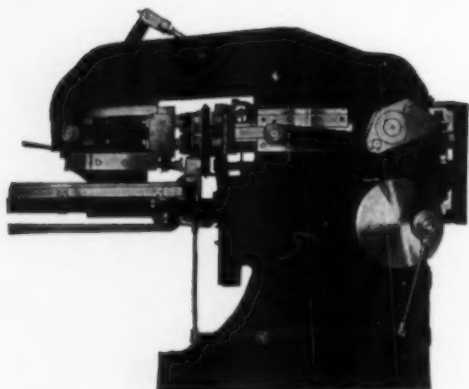
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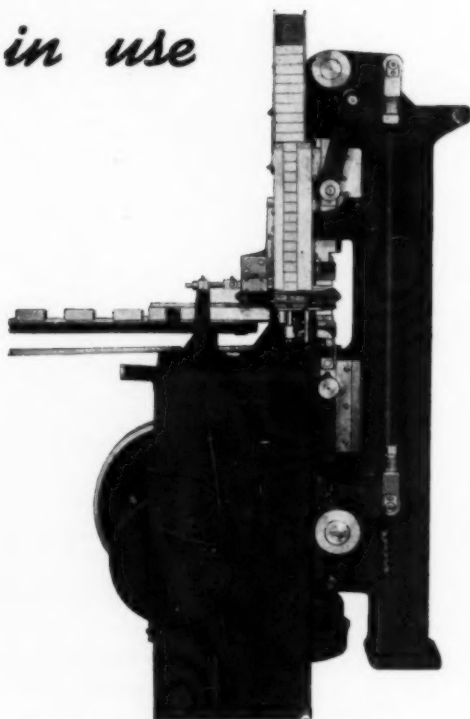
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EDITOR

TALK that a general break-down in the O.P.A. price ceiling program is imminent has been bandied about in more than one industry. Oils, fats and soaps have been no exception. That much of this talk may be discounted is apparent, but it is also apparent that it cannot be ignored either by O.P.A. or by industry. Attempts and devices to circumvent ceiling prices evidently have been and are quite widespread if we are to credit reports in the trade.

Buyers of fats in a market such as we have had for the past few months have in some instances not been unwilling to pay a price higher than the ceiling in order to obtain supplies. Better it is, they must reason, to pay more than to get no fat at all. And sellers, naturally, have not been too pleased by the level of current ceiling prices for oils, fats and greases, and have held back their material from the market. The sum total has been effectively to bring buying and selling to a standstill and to give the impression of a market bare of stocks.

Threats by O.P.A. to crack down on those who sell or buy above ceiling prices either through direct misrepresentation of quality or through collusion, will not correct the condition. Neither will the actual crack down or "making an example" of one or two violators. Because the fault lies mostly with O.P.A. and the system under which it operates. In the first place, O.P.A. takes far too long to make and announce its decisions, hence inducing sellers to hold back their fats from the market hoping for more favorable developments. Second, the O.P.A. is trying to juggle something far bigger and more powerful than it is itself, the law of supply and demand,—and in so doing, fat supplies have been tied in one of the tightest

knots which we have seen in twenty odd years.

Granted that under present conditions, rigid price control is essential to prevent inflation. But so complicated and involved have become the workings of O.P.A. and so entwined with red tape that there can be no wonder that the average business man thinks he sees signs of the whole price ceiling structure toppling of its own weight. Industry has quite definitely lost confidence in O.P.A. and that loss has been to some extent both invited and deserved. Furthermore, uncertainties bred of O.P.A. decisions, or lack of them, are of no help in the efficient operation of American industry in the war effort. Difficulties faced by O.P.A. are not to be minimized, but too many of their problems have become complicated through their own actions, their own red tape and ridiculous hair splitting. If O.P.A. does not mend its ways, it will for a certainty bring about the oft predicted chaos in markets and prices.



FURTHER restrictions on the use of oils and fats in the soap kettle are imminent. Heavy demand for edible fats and oils, particularly for export to our armed forces and on Lend-Lease, will probably mean that no oils suitable for edible purposes or for conversion into edible fats will be permitted to be used in soap manufacture. This would include most of the domestic vegetable oils such as corn, peanut, cottonseed, and particularly soya bean oil, leaving for the soap kettle a rather restricted list such as inedible tallow and

greases, foots and refining residues, linseed oil and one or two other minor non-edibles.

Plans to divert soya bean oil wholly to food uses to fill gaps in the anticipated 1943 fat shortage seem to represent a bone of contention. The prospect of replacing it with various types of hydrogenated linseed oil in soap manufacture has evidently not brought forth many cheers from affected soapers. Some parts of the soap industry had looked forward to leaning heavily on soya bean oil derivatives as a partial replacement for coconut oil.

Just how further restrictions on fatty raw materials for soap manufacture will affect glycerine production remains to be seen. To us, it would appear that to tie up soapers too tight on their fat and oil supplies cannot avoid endangering maximum glycerine output. The problem may narrow down to the question of which is more important, Lend-Lease fat shipments or an uninterrupted supply of glycerine for the production of ammunition.



AT A recent meeting of the National Renderers Association,—which formerly was known as the Association of Producers of Domestic Inedible Fats,—a resolution was addressed to the Association of American Soap & Glycerine Producers strongly recommending a continuation of the advertising program to salvage waste kitchen fats and grease. The Renderers' Association noted that there had been a marked falling off in collections of household fats and that all indications pointed to a still further reduction unless something is done to stimulate collections.

Every pound of household or restaurant grease collected today is just about twice as important as it was last summer when the Waste Fat Collection Program got under way. Less fats will be available from industrial channels and the demand will be greater than ever. The importance of augmenting regular supplies by boosting collections of household waste fats is quite

apparent to everybody who has noted developments in the oil and fat markets over the past few months. The waste fat program is under way and operating. Money spent now to speed up the rate of grease collections,—under present conditions supplies of household grease will continue to dwindle,—will be money well spent. There is no doubt that the need to increase waste fat collections is far more urgent now than it was six months ago.



SHALL liquid soaps be eliminated? From the War Production Board comes word that this subject is now being studied as part of a general plan to eliminate cross-hauling of raw materials and finished goods, to reduce the shipments of unnecessary materials, and to insure enough tank cars to handle supplies allocated to the soap and glycerine industry. Because of the high water content of many liquid soaps, W.P.B. apparently views the neck of such soaps as a logical target for its axe.

We can assure W.P.B. that the whole liquid soap business of the country is not worth too much of its valuable official time right now. It's strictly peanuts. And as for conserving tank cars by eliminating liquid soaps, we can further assure W.P.B. that none will be conserved. Liquid soap shipped in tank cars yearly would fit in the proverbial gnat's eye. And as a means to avoid cross-hauling, we can likewise assure W.P.B. that liquid soap production and distribution is pretty much of a local proposition. In fact, with a liquid soap plant in about every other hamlet from coast to coast, the coincidence that this particular branch of the soap industry does not number too many millionaires among its personnel is not surprising. And here we sit watching W.P.B. whet its axe while mulling over the "practicality of eliminating liquid soap." Do you imagine that they will appoint a "task committee" to conduct the execution or just let, Joe, the office boy, attend to it on his day off?



SALT WATER DETERGENTS

ALL technical details arising in the procurement of supplies of soaps and detergents for use aboard Naval vessels are under the direction of the Standards and Tests Section of the Bureau of Ships, Washington, D. C. Prior to Pearl Harbor the Bureau authorized two Naval Laboratories, the Naval Engineering Experiment Station, Annapolis, Maryland, and the Test Laboratory, Navy Yard, Philadelphia, to conduct investigations of detergents for the purpose of developing new detergents and finding the best ways of using detergents. A particular purpose was to make possible the use of salt water in washing operations wherever possible. The importance of conserving fresh water aboard ships, which are to be at sea for any length of time, is obvious. Later, an important aspect of these investigations became the

conservation of critical materials such as coconut oil, olive oil and glycerine.

The Naval Engineering Experiment Station has conducted an extensive investigation of laundry methods and detergents. A wash formula has been developed which uses three washes in salt water, two rinses in sea water and a final rinse in fresh water. Employing detergents carefully selected from sixty-three tested, results for salt water washing in wash wheels are equal to the results achieved with the conventional wash formulas using soap and alkali in soft water. In the course of the investigation, new and reliable methods of evaluating the relative efficiencies of detergents were developed.

The Test Laboratory, Navy Yard, Philadelphia began its investigation of detergents with a comprehensive study of detergents for machine

by

N. E. Ruckman

Ray Hughes

*F. E. Clarke**

TABLE I
Removal of Soil From Painted Surfaces—Relative Cleaning Efficiency of Solutions of Detergents in Synthetic Sea Water.

Form	Compound Probable Composition	—Concentration of Detergent—		
		2 Per Cent	4 Per Cent	6 Per Cent
Bar	Synthetic detergent and soap (51D7)	72	83	84
Powder	Synthetic detergent	76	80	81
Powder	Synthetic detergent and a borate	55	78	86
Liquid	Synthetic detergent	68	72	75
Paste	Synthetic detergent and alkalies	65	73	80
Powder	Synthetic detergent and alkalies	64	69	73
Paste	Synthetic detergent	64	68	72
Powder	Mixture of alkalies	55	67	79
Powder	Synthetic detergent	55	61	66
Paste	Synthetic detergent and alkalies	40	55	68
Powder	Alkalies and insoluble organic matter	41	53	61
Paste	Soap and abrasive	29	35	41
Bar	Coconut oil soap (P-S-611)	26	34	81

dishwashing. A practicable and reproducible method for evaluating the performance of these detergents using a Navy type dishwashing machine was developed. Tests of available types of machine dishwashing compounds showed that certain types had markedly superior performance to the others, including the Navy formula previously used. Turning to the problem of evaluating performance of soaps and cleaning compounds for painted surfaces, the laboratory has developed a reliable method for evaluating efficiency in removing soil from painted surfaces. Details of the method are given below. The artificial soil used resembles a type of soil commonly encountered and which is quite difficult to remove. Results of tests correlate well with practical experience and are reproducible. Testing equipment is mechanical and the results are evaluated with a reflectometer, thus eliminating the human factor from tests.

In the course of the above investigations, the type of product covered by Bureau of Ships Ad Interim Specification 51D7 (INT) of April 15, 1942, Detergent; Salt-Water, Bar Form, was developed. One of the exhibitors had submitted several detergents made from domestically available materials for tests. Among these

* The opinions or assertions contained herein, are the private ones of the writers and are not to be construed as official or reflecting the views of the Navy Department or the Naval Service at large. N. E. Ruckman is Associate Materials Engineer, Standards and Tests Section, Bureau of Ships, Navy Department, Washington, D. C. Ray Hughes is Associate Chemist, Test Laboratory, Navy Yard, Philadelphia. F. E. Clark is Assistant Chemist, Naval Engineering Experiment Station, Annapolis, Md.

was a cake made with synthetic detergent and a small amount of inert binder. The practical difficulty with this cake was that special equipment is required to form it which is not available to produce the quantity of bar form of detergent required. The exhibitor was encouraged to experiment with the idea. Another type of cake using soap as the binder had been produced by the exhibitor as a laboratory curiosity several years before and had since been almost forgotten. This was dusted off and appeared promising in preliminary tests. The exhibitor worked out a method for producing it in the ordinary equipment used by soap makers for making laundry soaps, and coconut oil soaps in accordance with Federal Specification P-S-611. A small production run was made which confirmed the practicability of the method.

It is known that soap is a poor detergent in salt water unless an excessive quantity is used. Since synthetic detergents are effective in low concentrations in salt water as well as in soft water, it was thought that the soap would serve merely as a binder and contribute nothing in the way of detergency when washing with salt water. When the samples of the product were tested, it was, therefore, a surprise to find that the soap contributed its share to the effectiveness of the product as a cleaner. Furthermore, the soap did not form curds in salt water as does the previous salt water soap made from coconut oil.

The product was tested for re-

moval of soil from painted panels by the method given below and was found to be superior in performance in sea water to all other detergents tested, when solutions containing two to six per cent of detergents are compared. Detergents tested included the common types of synthetic detergents, alkalies, mixtures of alkalies and synthetic detergents, soap, mixtures of soap and synthetic detergents, and mixtures of soap and abrasives. The data given in Table I is typical of other detergents tested. It will be noted that one of the synthetic detergents tested approximates the cleaning efficiency of the bar form of salt water detergents manufactured in accordance with Bureau of Ships Ad Interim Specification 51D7 (INT). That material is in the form of a powder instead of the desired bar form. It, therefore, lacks convenience for the general scrubbing uses to which the bar form of salt water soap is put. Experience has shown that for general use by all personnel a powder is wasted due to the use of excessive amounts. It should be mentioned that powdered detergents of this type are being procured for certain cleaning purposes. Synthetic detergents procured for laundry purposes fall into a third category. It will be noted that coconut oil soap becomes an effective detergent in sea water at a concentration of 6 per cent. This concentration marks a sudden increase in the cleaning power. At a concentration of 5 per cent the efficiency of cleaning was only 35 per cent. It requires this amount of soap to soften sea water before effective detergency can begin. The soap used was taken from stock and had dried out. Federal Specification P-S-611 permits 55 per cent of moisture and still more of the freshly made soap would be required to soften sea water.

The new product was developed just in time. Schedule 501 of March 20, 1942, for approximately five million pounds of coconut oil soap brought bids for a total of only one and one-half million pounds because of the impending shortage of coconut oil. Specification 51D7 (INT) was prepared containing information on how

Method of Test Used to Determine Cleaning Efficiency

I—PREPARATION OF TEST SPECIMENS

A. Painted Panels

1. 10" x 3" x 1/16" steel panels are used.
2. Panels are painted as follows:
 - a. Zinc Chromate primer—BuShips Ad Interim Spec. 52P18(INT).
 - b. Inside White—BuShips Ad Interim Specification 52P22(INT).
 - c. Outside White Enamel—Navy Formula 30A.
 - (1) Panels are allowed to dry one week between coats and one month after final coat is applied.

B. Application of Soiling Mixture

1. Composition of soiling mixture is as follows:

Metallic Brown	20 gm.
Kerosene	20 gm.
Carbon Tetrachloride	20 gm.
Heavy White Mineral Oil	1 gm.
Aircraft Engine Oil	1 gm.
Hydrogenated Vegetable Oil	1 gm.
2. Application of soil to test panels:
 - a. Well-shaken soiling mixture is evenly applied by means of a brush to painted panel held in a horizontal position.
 - b. Panel is baked in an oven at 100-105°C. for a half-hour and then cooled to room temperature.

II—WASHABILITY APPARATUS

A. Description

1. Modified form of the Davison Washability Apparatus, as manufactured by Henry A. Gardner Laboratory, Inc., Bethesda, Md., is used.
 - a. Brass box, 4½" x 3" x 1", open at one face, is soldered to the end of the windshield wiper arm. The metal is about 1/32" thick.
 - b. At each corner of the box upright pins are attached to hold lead washers.
 - c. Total weight of weighted box containing sponge is 1 pound 11 ounces.
 - (1) Spring in wiper arm is disconnected so that no extra pressure bears on sponge.
 - d. DuPont cellulose sponge, 4¼" x 1½" x 2¼" dry or 5" x 3" x 2¼" wet is fitted into brass box.
 - e. Apparatus is mounted on baseboard 30" x 20" x 1" covered with and provided in the center with metal stops 1/32" thick. These stops prevent the test panel from moving with the wiper arm.

III—WASHING PROCEDURE

A. Description

1. Soiled painted panel is placed in space on baseboard.
2. Burette filled with detergent solution is clamped to ringstand and held above panel.
3. Twenty-five cc. of solution are poured onto sponge which is then placed in brass box attached to wiper arm.
4. Fifty cc. of solution are poured onto panel so that it is completely covered. The panel is allowed to soak for one minute.
5. Wiper arm is started to give 1 stroke per second and allowed to scrub panel for 100 strokes.
6. At the time wiper is started, burette stopcock is opened so that detergent solution falls onto panel at such a rate that approximately 12 cc. drip onto panel during each 100 stroke period.
7. At the end of 100 strokes, panel is removed, rinsed with cold tap water and returned in an inverted position to the baseboard which has been cleaned of excess soil and detergent solution.
8. Sponge is removed, thoroughly rinsed with cold tap water, and squeezed out.
9. Twenty-five cc. more of detergent solution are poured onto sponge which is then replaced in brass box.
10. Panel is scrubbed at designated rate for another 100 strokes while 12 cc. of solution drop onto its surface.
11. Finally, panel is removed, rinsed with cold tap water and allowed to dry in the air.

IV—MEASUREMENT OF CLEANING EFFICIENCY

A. Before Soiling

1. Reflectance of unsoiled panel is measured by means of the Hunter Reflectometer using the green (luminosity) filter. The instrument is first standardized against a porcelain plate of known reflectance.

B. After Soiling and Scrubbing

1. Reflectance of soiled scrubbed panel is measured as in IVA1.
2. A numerical measure of cleaning efficiency is obtained by dividing the average reflectance of washed panels by the original reflectance of unsoiled panels and multiplying by 100.

to manufacture the new product as well as the requirements which it must meet. Copies were mailed to potential manufacturers with a request to consider the requirements and be prepared to bid on a large procurement. When Negotiation No. 1440 was opened on July 3, 1942, bids had been received from a number of companies for several times the three million pounds covered by the invitation. Much of this material has now been delivered to Navy Yards which distribute it to Naval vessels. A second negotiation for twelve million pounds, No. 1770, opened on August 25, 1942, brought a similar response. The contracts on both negotiations were largely placed with soap manufacturers, who contract with chemical companies for the required synthetic detergents. There are several producers of suitable synthetic detergents. The speed with which the industry adapted itself to the change deserves commendation.

Production of synthetic detergents has been sufficient to meet the requirements of contracts placed on the new product. However, the Army has been securing increasingly larger quantities of synthetic detergents for use in mobile laundry units and is investigating an all-purpose toilet bar for use in all types of water. Such a toilet bar must also contain a synthetic detergent as one of the major constituents. Figures on probable requirements cannot be made public and any figures which have been published are mere conjectures. However, it is likely that these new demands will create a shortage of synthetic detergents and many civilian uses may have to be curtailed unless synthetic detergent production can be increased.

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An attempt was made to apply the Tiselius' adsorption method of analysis to some triglycerides and fatty acids. Trilaurin, trimyristin, tripalmitin and triolein in ether were passed through active carbon. The retardation volumes are trilaurin 9.3 cc., trimyristin 9.8 cc., tripalmitin 21.0 cc., triolein 9.7 cc. in 1 per cent ether solution with a 20 mm. active carbon filter.



CASTOR

Castor beans, all-important raw material for castor oil, magnified about twice average size. Government fostered castor planting in 1943 will probably run as high as 150,000 acres in Texas, Florida and other states.

THE castor plant is more important in the American war effort than almost any other plant grown in this hemisphere. It is so important that coffee from South America was rationed in this country partially in order to provide shipping space for castor beans, while the Department of Agriculture deems the plant so essential for a multitude of reasons that it is inaugurating large scale plantings in 1943 to provide a domestic crop. So important and so varied are the uses for castor products that the demands for them after the war are certain to expand into major proportions exceeding all pre-war estimates.

For example, the stocking manufacturers are reasonably convinced that nylon will permanently transplant silk for women's hose and other fabrics. Large quantities of sebacic acid are needed to make nylon, and sebacic acid is a fatty acid derived from castor oil. After the war, we are certain there will be a greatly increased demand for non-shatterable plastics such as

those which are presently used in our airplanes, certain of which are based on castor oil.

By the time the war is over, the shelves of the paint stores will be stripped of quick-drying paints and varnishes for domestic use. As a matter of fact, the production of all such quick drying protective coatings has been diverted to war use for several months now. One of the best possible bases for quick drying paints and varnishes to meet the enormous future civilian demand is dehydrated castor oil. Over 44,240,000 pounds, both dehydrated and raw, were used by the protective coatings industry as raw materials in 1941.

But let us go back and review a few of the uses for the castor plant that have been converted both for our war effort and our civilian needs, and after that I will point out what the prospects are for a diversion of castor oil to soap and cosmetic manufacturers. I will also outline the prospect for a

permanent domestic crop and explain the problems faced by the farmers in growing the castor plant.

In this war, as well as in the peace to come, castor oil has its part in the lubrication of airplane engines. It is a necessity on any plane flown to a great height. The reason for this is that castor oil has the very important quality of flowing at very low temperatures, and when it is partially dehydrated it becomes miscible with mineral oil. Thus with the addition of a small percentage of partially dehydrated castor oil to lubricating oil of mineral oil origin, possibly as little as 5 per cent, the mixture will not congeal at low temperatures and makes it possible for planes to fly to the great heights required by military necessity today.

Castor oil is unique in the fact that it is apparently the only natural vegetable or animal oil that is soluble in alcohol. It can be refined so that the acid number is very low and the low acid number can be retained under

OIL...

By Mark Richelsen

Woburn Degreasing Co. of N. J.

use for a considerable period of time. This property, together with the fact that it will not eat out gaskets as do almost all other oils, makes it the most nearly perfect oil for hydraulic brakes. A considerable quantity of this oil is needed for this purpose in peace times and also for hydraulic brakes on all mechanized war equipment, such as gun carriages, airplane landing gear, tanks, motor trucks and wherever hydraulic brakes are advisable and desirable. For this purpose a mixture of alcohol, castor oil and small quantities of other ingredients apparently gives perfect service. Furthermore, in the recoil mechanism of cannons and big guns of all types, it is necessary to use a liquid to cushion the shock of the explosion. The peculiar characteristics of castor oil make it by far the most satisfactory liquid to use for this purpose, since it will not attack gaskets and the recoil mechanism will not fail under use. In many types of airplane bombers, the bomb bay doors are opened and closed by hydraulic pumps operating with castor oil hydraulic fluid. The revolving turrets on tanks are operated by the same kind of castor oil hydraulic fluid.

The castor plant may become a new and important crop for American farmers. Grows as far north as New Jersey, but mainly in Florida and Texas, and has been known to grow as tall as 30 feet in one season

Germany and Japan had also developed the use of castor oil for these same mentioned purposes in connection with their airplanes and mechanized equipment and we know as a fact that just before we entered the war, Japan

and Germany and Italy were buying millions of pounds of castor beans a month from Brazil.

All military equipment must have suitable protective coatings to guard it from the elements. By pro-



IN outlining the present importance and future possibilities of castor oil as an industrial raw material, Mr. Richelsen, Woburn's public relations director, draws on a wide fund of information close to castor sources. He sees castor oil not only as a vital war material, but as tremendously important in post-war developments, including soap manufacture. Facts are brought out here, some of which we believe were not previously available.—The Editors.

protective coatings, we of course, mean paint, varnish, enamel and lacquer, which consist primarily of oils and pigment, but with the oils that are used constituting the real protection. These protective coatings must be able to take a lot of punishment. They must be tough and hard and to a considerable extent flexible. They must be able to withstand water, alkali and acids and when used on warships and transports must be able to take particularly severe punishment from salt water. In addition to these properties, the protective coating must dry quickly. The production of military equipment would be very much slowed up if bottlenecks occurred on the assembly lines because

the paint did not dry in a short time after being applied to the equipment. Chinawood oil, known also as tung oil, is the oil heretofore used to obtain protective coatings with these properties, but chinawood oil is practically unobtainable today except for small quantities that trickle out of China and except for the comparatively small quantity produced in this country.

So far as is known, the best alternative material to tung oil is dehydrated castor oil. By the proper use and treatment of dehydrated castor oil practically the same results can be obtained as by the use of tung oil and in addition dehydrated castor has some very valuable properties that tung oil does not possess.

We all know that mineral oil is very intimately tied up with the war picture and that great quantities of high octane gasoline, lubricating oil and fuel oil are required. Castor oil performs an important function in the production of crude mineral oil. Crude oil when pumped from the ground usually contains a certain amount of water emulsified with the oil. Sometimes the percentage of water in the oil runs as high as 15 per cent. Formerly the practice was to pump this oil into huge storage tanks and keep it there for a considerable time to permit the water to break out. That process is now very much hastened by the use of certain castor oil compounds which act as excellent emulsion breakers that split out the water almost immediately,—thus saving many hours and even days in the process of converting crude oils into the finished products required by the war machine. This same property of emulsion breaking is used for cleaning out the heavy masses of residue that clog the bottom of oil storage tanks since these residues are mainly emulsions on which castor oil compounds act very quickly and permit the quick cleaning out and drying of the tanks.

Several additional important uses for the demulsifying compounds made from castor oil are in the oil wells themselves to break the brine formation inside the wells which cuts down well production. In locomotive boilers,—particularly the locomotives of the western railroad lines where there is an excess of alkali in the water, castor compounds find use.

Large quantities of sulfonated castor oil are widely used in the textile industry to treat cloth so that it will dye easier. Sulfonated castor oil is used in the leather industry as a softening agent, and army requirements call for the treatment of leather equipment with sulfonated castor so that it will

Leaves of the castor plant contain an insecticidal ingredient used in agricultural pest control. Grinding the castor leaves prior to extraction of the insecticide material in Florida.



be able to withstand rigorous outdoor weather conditions. Sulfonated castor is also important in the finishing of certain paper coatings,—especially some glazed finishes. It is a very important constituent of pyroxolin fabrics,—that is to say artificial leather and similar articles.

Castor oil, when hydrogenated, serves as an excellent substitute for certain natural waxes which previously have been imported and which, of course, are now practically shut off. Castor oil also finds uses in mucilage or glue in the labeling of cans and bottles and in sticky fly paper. A more recent development is the manufacture of household type insecticides from derivatives of undecylenic acid which is obtained from castor oil.

THERE are, of course, a multitude of other uses to which castor oil is put, but the foregoing builds up a reasonably vivid picture of its great importance, particularly so far as military needs are concerned. There is not nearly enough castor oil available to supply these very important needs and supply normal civilian uses too, so castor oil is now a critical material and cannot be used except by specific permission of the War Production Board. This means that soap and cosmetic manufacturers are not likely to get any further supplies unless America can develop a domestic crop, or a crop in an adjacent country easily accessible by rail, or unless the ocean shipping situation changes materially.

Let us look at some comparative figures on the imports and production of castor oil. Our monthly requirements have risen to almost 15,000 tons of beans, while our imports for September and October together totaled less than 6,000 tons of beans. Production of castor oil for the quarter ending December 31, 1941 was 49,320,000 pounds. Consumption for the same quarter was 25,891,000 pounds, and stocks on hand, 19,270,000 pounds. Over 54,680 tons of beans were crushed. Production of castor oil for the month ending October 31, 1942 was 6,685,000 pounds. Consumption for the same month was

Equipment for the manufacture of dehydrated castor oil — actually polymerized, — at the Woburn plant at Harrison, N.J. Synthetic drying oils from castor oil to replace unobtainable chinawood or tung oil in quick drying paints for many war uses.

5,227,000 pounds, and stocks in hand, 13,684,000 pounds. Some 7,200 tons of beans were crushed in October, 1942.

The Commodity Credit Corporation through the Bureau of Economic Warfare, which is in effect an agent for the C.C.C., acts as the buying agent for all supplies of materials for the production of castor oil. But, the War Production Board allocates those supplies. And the WPB has recognized that there are certain industries whose

use of the oil is more essential than others. Therefore the WPB's allocations are based on that essentiality,—on those industries considered most essential for the war program. This means that castor oil will go only for such things as dehydrated castor oil with an end use in protective coatings on war equipment, for sulfonated castor oil to treat textiles, for war plastics, for hydraulic fluids going into war machines, and into lubricating oils for airplanes. Potash soapers will not get any unless there is enough for both, or they are using it in products for the Army or Navy. At the present time there is not enough oil for both war and civilian needs.

In consideration of this country's necessity to fight the war on and over the soil of other nations and is-

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ARMY'S G. I. SOAP

How and why yellow laundry Government Issue soap has withstood the march of time as the main military detergent

SHARP differences of opinion exist over the merits of "G. I.,"—Government Issue, soap. One school, the users, members of the armed forces complains that "this (G. I.) soap is a nemesis to grease and dirt, but it has a deleterious effect on the skin if one is in contact with it for any length of time." The other school, the manufacturers of "soap; laundry, ordinary, bar," as G. I. is prosaically described in Federal Specifications, holds that for the price, G. I. is a pretty good all-around cleaner.

Soap makers point with pride to the fact that Government Issue soap is about the same as many of the popular yellow laundry soaps now on the market that have been sold to housewives for years. Official Army opinion, inferentially, it that this G. I. soap is the best that can be devised for the money. And the Army is very fully aware of the price angle. But it must also be remembered, as was pointed out at one Quartermaster Depot, that it would not be natural or politic for the Army to criticize another government bureau, the laboratories of the Federal Bureau of Specifications, who cooperated in the drawing up of the specifications for G. I. soap.

Specifications for Government Issue soap have remained pretty much the same down through the years. The first recent revision in the past 11 years came out January 24, 1942. It bore the number P-S-591a, and superseded Federal Specifications P-S-591, which was issued February 3, 1931. Except for four minor changes, published April 29, 1942, P-S-591a contains the specifications for ordinary laundry bar soap, familiarly known as

"G. I." The changes ordered in specification sheet E-P-S-591a were made "for the purpose of conserving glycerol," according to the Bureau of Standards.

As Federal Specification P-S-591a now stands, including the changes written in according to E-P-S-591a, one type ordinary laundry bar soap is covered. The specification states that "... the soap shall be made from soda and fats or fatty acids, with no excessive proportion of rosin and a moderate amount of matter insoluble in alcohol and shall be suitable for use with moderately hard water for general cleaning and laundry purposes." The specification also adds "the odor shall not be objectionable in the soap as received or in a hot solution of the soap in water. The material shall not leave an objectionable odor on dishes or other objects after washing with a water solution of the soap and rinsing thoroughly with hot water. The odor is to conform to the odor of the sample mutually agreed upon by the buyer and seller."

The following specific requirements also apply: ... there shall be a maximum of 36 per cent moisture and matter volatile at 105° C.; a maximum of 11 per cent, and a minimum of 2.0 per cent were set for free alkali or free fatty acid, total matter insoluble in alcohol, and sodium chloride; a .5 per cent maximum was indicated for free fatty acid, calculated as oleic acid; matter insoluble in water was fixed at a 1.0 per cent maximum; chloride, calculated as sodium chloride, 1.0 per cent maximum; rosin is not to exceed 25 per cent maximum; total glycerol content (percentage of anhydrous soap),

was fixed at 0.7 per cent maximum. The percentage of moisture and volatile matter shall be computed, and reported by the testing laboratory on the soap as received, say the specifications. The percentage of all other constituents shall be calculated and reported on an assumed moisture and volatile matter content of 36 per cent.

Government Issue, ordinary bar laundry soap, as can be seen from the specifications, conforms closely to ordinary yellow laundry soap of the rosin variety so familiar as an all-purpose soap in homes a few years ago. The resemblance is carried out in appearance, odor or taste, and texture and feel.

There are also new analytic methods of sampling and testing soap and soap powders, as contained in Federal Specification P-S-536a, issued June 25, 1942, which supersedes Federal Specification P-S-536, issued March 4, 1937.

Packing for G. I. soap takes two forms: cardboard ("fibre") cartons and wood boxes. The latter are generally used for overseas shipments. One of the reasons assigned the use of wood boxes for G. I. soap to be shipped abroad was thought to be the widely circulated story that rats got into some of the soap packed in paper cartons that were landed in England. Considerable damage was caused. The wood box varies from the cardboard carton in that it is flatter and longer. Wood is also more expensive than cardboard. For this reason, the government allows a slightly higher price for G. I. soap packed in wood. In cardboard, there are 60 one-pound bars to the box. There is usually some sort of lining in

the cardboard container to protect the soap from water, etc. The cardboard container, as was mentioned a moment ago, is taller and narrower than the wood box type container, being about 18 inches square and 24 inches deep. On the point of packaging, Federal Specification P-S-591a generalizes: "commercial packages are acceptable under this specification."

A specific difference between user and maker of Government Issue soap is found on the subject of using it for bath or shower. The manufacturer contends that G. I. will only be hurtful in cases where the user has a particularly tender skin. In Army camps, there is a common threat to scrub a man with G. I. soap and brush if he is inclined to bathe too infrequently. "Mass murder" is the way one recruit describes such treatment. However, in this instance, the use of the brush cannot be assumed to have beneficial effects on the victim's epidermis. Industrially and in the household, yellow laundry soap has been widely used with few reports of harmful effects. Like many things that are given away free, G. I. soap may be

depreciated by the recipient merely because it is free. One soldier who was particularly vehement in his denunciation of G. I. later remarked that "Kirkman's (yellow laundry soap) is Lux compared to G. I." Well, as a matter of fact, G. I. and Kirkman's are practically identical. Accordingly, it is necessary: to take some servicemen's appraisals of G. I. with several grains of salt.

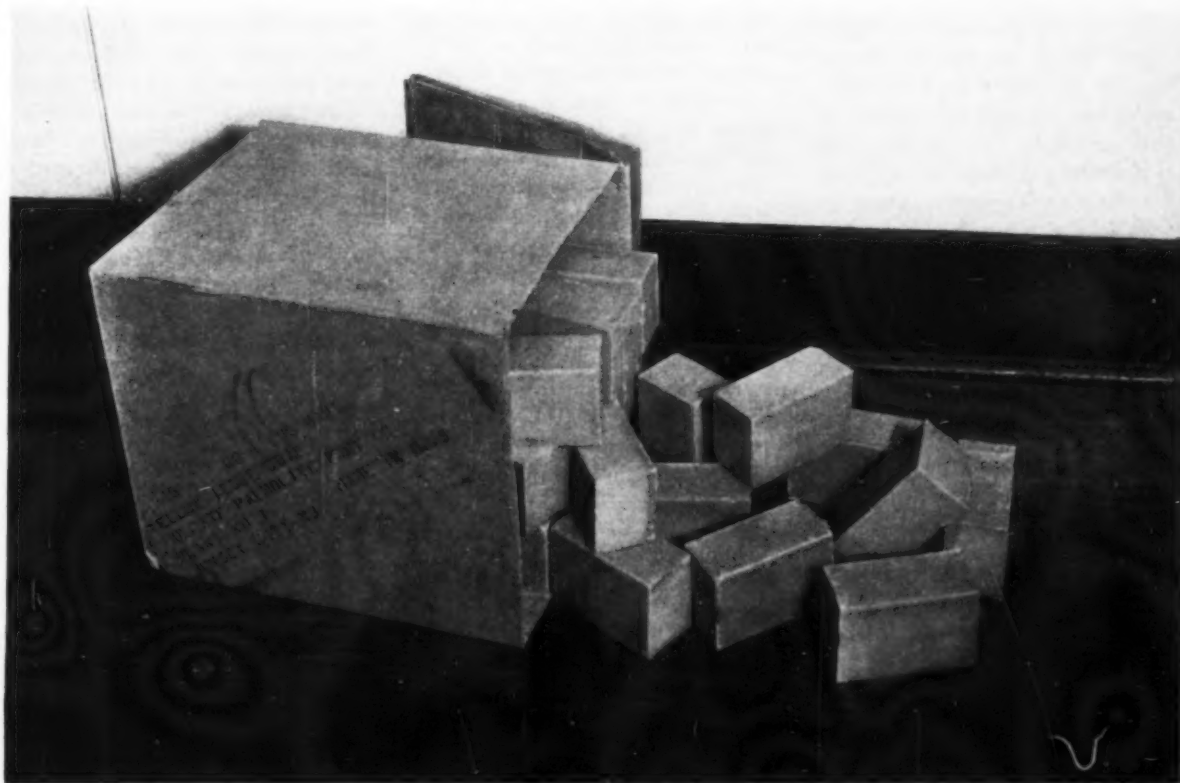
AS to the question of G. I. leaving an after-taste on dishes and utensils washed with it, there arises agreement out of disagreement. Here, the serviceman and manufacturer seem to find common ground. The soldier reports; "It (G. I.) cuts grease with ease, but has to be rinsed off thoroughly since it has a tendency to affect the taste of the food." A manufacturer of G. I. confirms the soldier's point that the soap has a bad effect on food served on dishes washed in G. I. It is his belief that unless dishes are properly rinsed in hot water that is not too hard, a soap film is apt to remain on the eating utensils. The soap cannot be tasted

or smelled, but does affect the food, he reported.

The problem of proper rinsing is further complicated by local water conditions, especially where men are in the field, and use of water softeners is difficult. It is possibly for this reason that the men sometimes prefer to use sand to scour their mess kits rather than Government Issue, but probably because sand is easy and handy. One of the easiest ways to get G. I. after-taste is the use of a common wash or rinsing barrel that is often used by the Army when the men are on manoeuvres or on some distant battlefield. In this way, they line up to pass the cook, and further down the line rinse their dishes in a common barrel of water. The men at the end of the line get not only their share of G. I., but a good bit of food particles left by the men ahead of them.

Dish washing in those camps where "doing the dishes" is a manual operation is handled in an interesting if somewhat unorthodox manner. "In the Army they have a system for all things" is the way the soldier prefaces

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AMMONIA SUBSTITUTES . . .

Development of liquid cleaners to replace household ammonia now unavailable because of war demand for nitrates

SAYS a current advertisement of one of the oldest and best known manufacturers in the household ammonia field, "Household ammonia has gone to war." And, accordingly, manufacturers have lost no time at all in developing so-called ammonia substitutes to take its place. Within the past few months, at least a half-dozen new household cleansers to take the place of ammonia have appeared on the market, and others are sure to follow during the coming months. The necessity for the new products is, of course, traceable to the tremendous demand for nitrates for the manufacture of explosives.

For the manufacture of gun-cotton, T.N.T. and other by-product ammonia salts explosives, nitric acid is needed for the nitrating process, and nitric acid means fixed nitrogen. And even though our supply of free nitrogen in the air is unlimited, the equipment for its fixation is all in use for war purposes, leaving none for the production of ammonia which is also a nitrogen compound. Consequently ammonia in all its forms, including ammonium salts such as ammonium carbonate and ammonium chloride, has been forbidden for use in cleaning preparations.

The WPB control measures are orders M-163 and M-164. They place all ammonium products under full priority control, and even though in isolated cases small amounts might be obtainable with priority assistance, supplies which might be obtained in this way would be strictly limited. Even ammonium sulfate, on which there is a more ample supply, is of little assistance in the present situation, as it would

contribute none of the good qualities of the former ammonia cleaning preparations,—not even a satisfactory ammonia odor.

With all forms of ammonia thus pretty well eliminated from consideration as raw materials, producers of household ammonia have been forced to turn at short notice to the development of suitable substitutes or else retire from the business for the duration.

It is interesting to observe the varying approaches that different firms have taken to this replacement problem. Some have followed the general idea of simulating the appearance and odor of ammonia as closely as possible, even adding soap, lime water or borax to give the same cloudy ammonia effect. Others have abandoned the characteristic appearance and odor of ammonia completely, offering products colored green or otherwise, and perfumed with pine or other suitable odors. Incidentally one of the best known suppliers of household ammonia has brought out a product of this latter type, but, interestingly enough, has retained the characteristically shaped ammonia bottle,—the tapered oval. This carries over product identity, trades on good will of a former familiar household package, and offers the additional advantage, possibly, of using up existing stocks of bottles.

The problem of arriving at satisfactory replacements for ammonia has been eased somewhat by the fact that household ammonia was never in itself a particularly efficient product. Its main good points were that it was a quick and relatively effortless cleaner,

and most important, that it left no film on glassware or other such surfaces upon evaporation. Its evident disadvantages were that it deteriorated on standing, it was a caustic poison requiring a poison label, bottles might explode on exposure to heat, and the hands of users reacted badly to continued usage.

It is hard to say whether the characteristic ammonia odor was more of an asset or a liability. Opinions differ on this point. From personal investigations among users we would say that some housewives object very definitely to the ammonia odor, while others derive a certain amount of satisfaction and assurance of cleanliness from its brisk pungency. It has enough carry-over value in the present situation, at least, so that some firms designing replacement products have tried to retain the characteristic odor even though the ammonia content of their new product might make little or no contribution at all to its cleaning efficiency.

THE chief formulation problem in working out ammonia substitutes has been to develop products which would do the requisite cleaning job, yet leave no film, or as minute a film as possible on the cleaned surface. The relatively simple products have made use of trisodium phosphate, tetra sodium pyrophosphate, tetra potassium pyrophosphate, sodium carbonate, sodium metasilicate or other salts. Any one of them, or various combinations thereof, will do a satisfactory cleaning job, but the disadvantage of a film remaining on the cleaned surface is ever present.

In attempts to solve this problem other formulators have made use of various synthetic detergents and wetting agents. Oleic or other fatty acids have been added to formulas to minimize residual formation of crystals. Rosin has also been employed with somewhat this same idea in mind. Pine oil is an ingredient in many of the new products, largely for its deodorant characteristics. Water, of course, comprise the largest percentage of all products of this type, the percentage normally running around 94-96 per cent.

One of the new products, which seems already to have obtained wide national distribution is "Cole-Solv" a product of Cole Chemical Corp., Long Island City, N. Y. Other products have been developed by J. B. Parsons, New York, Beacon Chemical Corp., Philadelphia, Royce Chemical Co., Carlton Hill, N. J., and others. Some are being sold only in consumer packages, at retail, direct to the housewife, while others are available in powder form in bulk for shipment to sanitary supply houses and janitor supply jobbers, who merely have to add the necessary water and bottle the finished product.

From our observations it would seem that the formulation of a satisfactory ammonia substitute is not quite as simple a problem as appears at first glance. Rather than do the required experimenting with different formulas, the average seller of moderate quantities of household ammonia may well decide to purchase his material in bulk for repacking from a source that has already done the necessary technical work and is making a product which has already been proved to be satisfactory for the purpose.

LOOKING to the after-the-war market for these ammonia substitutes and also for household ammonia itself, leads to considerable interesting speculation. Will the new products stick, or will ammonia replace them as soon as it is again available, or will both be replaced by other products in the post-war era? The reasons behind the use of household ammonia over a long period of years may

answer the questions. Some of the good points of ammonia are that it is the one and only alkali which will evaporate completely leaving no trace of residue whatever,—that is unless it is cloudy ammonia containing a minute percentage of soap. It is the safest alkali for general use, seldom affecting dyes, paint. Its definitely alkaline reaction makes it effective as a water softener and in "cutting" grease and in the complete removal of thin grease films, this being particularly useful in washing glass to give it clarity and sparkle. Being liquid, its addition to wash water is quick and simple.

Compare the properties of the various substitutes, dilute solutions of T.S.P., sodium carbonate, pyrophosphates, and even some of the wetting agents. These alkalis have the same properties of softening water, of "cutting" grease and if rinsed properly will leave no film. Of course, the rinsing operation means a second pan of water and a second operation not needed with ammonia. As detergents, they are undoubtedly superior to ammonia, but like ammonia, have the same drawback of all alkalis of roughening and chapping the hands through continued use.

New Waste Fat Drive

Although collection of waste fats and grease has been growing each month nationally and in specific localities, the 16 million pounds a month goal has not yet been reached. Collection figures in October topped those of September by about 25 per cent, reaching 4,784,498 pounds. Since they are so far below the 16 million pound quota, the War Production Board's conservation division is expected to put on an intensified campaign to raise collections. The campaign will last for from 30 to 60 days. In announcing the drive, the WPB denounced as misleading stories that the fats were not being sent to munitions plants but were going instead to soap companies for the manufacture of soap. The WPB then went on to explain how the fats are collected, sent to the renderer and thence to the soap companies who alone have the neces-

In the liquid form, the solid cleaners also have the drawback of being about 95 per cent water. On this basis, how long can they hold the market against dry T.S.P. and other alkaline compounds where a small amount dissolved in water gives essentially the same results? Ammonia has held its market in the face of these more - for - your - money products for many years. On the same basis, is there reason to believe that the new liquid cleaners cannot do the same? The use of ammonia as a household cleaning aid, however, has behind it considerable tradition. It has been used for many years and has been found satisfactory for certain specific jobs. This use incidentally, dates back before the advent of trisodium phosphate and other phosphates and silicates for household cleaning.

Adding up all the factors, there is a likelihood that some of the newer items will stick, but there is also a very definite probability that household ammonia, particularly the brands which have been on the market for so many years, will return to dealers' shelves when war demand for fixed nitrogen in all forms ends and ammonia is again available commercially.

sary equipment for the recovery of the glycerine.

Fat Collections Grow In N. Y.

New York City housewives have been urged to redouble their efforts in the collection of waste fats by the local office of the WPB. One plan to increase collections was the setting up of central collection agencies in multiple type dwellings where a common receptacle would be used for the collection of waste fats and greases. Figures released by the WPB show a constant monthly growth in the amount of salvage, but local officials warned that in view of the meat shortage the utmost effort must be put forth to keep up the increases. In August, in New York City alone, 115,000 pounds of waste fats were collected, 156,000 pounds in September, 220,000 pounds in October and 245,000 pounds in November.



From the familiar cone-top metal package, the "EnerGINE" cleaning fluid package set-up has been revamped in accordance with recent prohibitions on the use of metal containers for many products. Glass bottles serve as the metal replacement.

"Moon-Shine" washing fluid cleanser, deodorant, disinfectant and bleaching agent, made by Moon-Shine Chemical Co., Pittsburgh, is now being marketed in amber "Duraglas" bottles, supplied by Owens-Illinois Glass Co. Wrap-around paper label is printed in three colors.



Economy, both in material and counter space, is achieved by this new display carton for "Nutrine" hair creme, made by Middlebrooke Lancaster, Inc., Brooklyn. The new carton is much smaller than the old and yet holds the same number of tubes. Designed by Robert Gair Company.

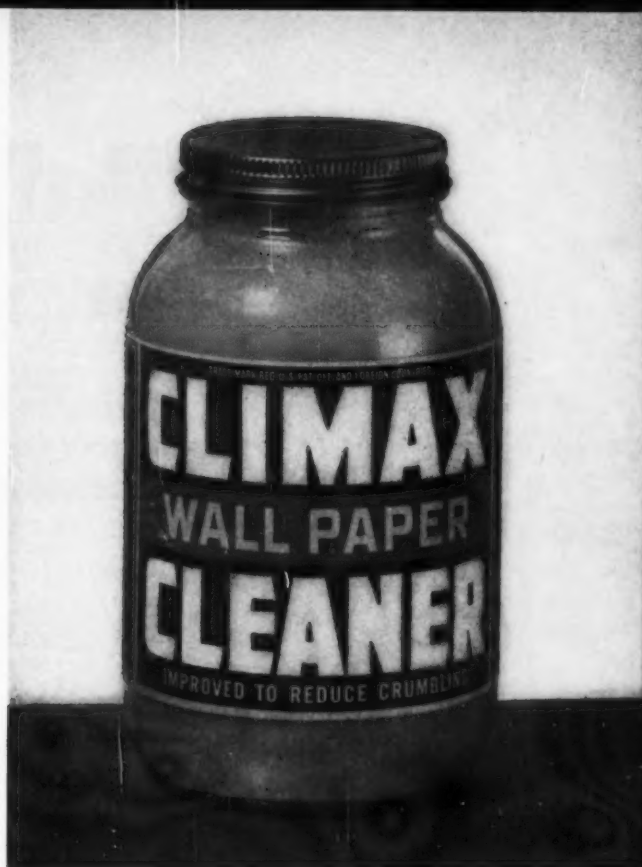
New Products

...

and Packages



Beacon Chemical Corp., Philadelphia, makers of "33" bleach, have just introduced "Zero" cleaner as an ammonia replacement. It is packed in a glass bottle reminiscent of the old household ammonia bottle.



Another in the growing list of products that is being packed in glass is "Climax" wall paper cleaner, product of Climax Industries, Inc. Climax found that transparent "Duraglas" jars—product of Owens-Illinois—show the color of the product (pink) to advantage.

New chemically treated polishing cloths in new packagings have been brought out recently by Cadie Chemical Products, Inc., New York. Polishing cloths for silverware, automobiles, military metals, furniture, shoes etc. are among many shown.



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NEWS

Name Scrap Chairmen

Soap, wax, chemicals and insecticide executives were warned by R. Merrill Decker, Regional Chief of the Conservation Division of the War Production Board, that unless scrap is obtained voluntarily, it will be requisitioned arbitrarily. This announcement was made at a luncheon of the Industrial Salvage Committee for Greater New York, meeting in the Hotel Roosevelt recently. Industry chairmen who will contact the companies assigned to them to get both scrap and monthly reports for the WPB are: S. W. Blackett of Procter & Gamble Co.; Lothair S. Kohnstamm, president of H. Kohnstamm & Co., laundry supplies, and James E. Marcuse, president of West Disinfecting Co.

Annual Rex Conference

The 1942-43 annual general conference on sales and service of Detroit Rex Products Co., manufacturers of industrial metal cleaning equipment and chemical cleaning compounds, was held December 11 and 12, at the Fort Shelby Hotel, Detroit. One hundred and ten sales and service engineers attended. Keynote of the meeting was maintenance and care of machinery now in operation. Material presented dealt with such subjects as: design and construction of degreasers and alkali washers, metal cleaning in aircraft manufacturing plants, application and operation of metal washers, and cleaning and finishing problems.

Reports Brisk Holiday Sales

Bath Toys Distributors, Chicago, report heavy Christmas sales of their "Baby Bath" soaps, molded in the form of ducks, fish and turtles, for which several "5 and 10" chains and the larger mail order houses are the outlets. Philip B. Schoen, the proprie-

tor, who established the business two years ago, said his products are custom made from his own designs. They retail at 10 cents per cake or three for 25 cents.

New Soap OPA Section

A separate section for the soap and glycerine industry under the Office of Price Administration has just been set up under the immediate supervision of Edward Randa, formerly a chemist for Armour & Co., Chicago. Soap had previously been grouped in the Protective Coatings Section. It will continue under this general section, but will now have an independent organization of its own headed by Mr. Randa. The latter was employed as a chemist by Armour & Co. for a period of seventeen years on laboratory work, technical sales, and more recently in a supervisory capacity. Gus D. Goldberg will continue as supervisory chief of the Protective Coatings Section.

P&G Wins Poster Award

Procter & Gamble Co., Cincinnati, received second place honors in the 13th annual exhibition of outdoor art, held in Chicago during November, this recognition being given for their 24-sheet poster, "I Feel Like a New Woman." Entries in this annual mid-

McConologue to WPB from C-P-P

W. A. McConologue, formerly of the Technical Service Division of the Industrial Department of Colgate-Palmolive-Peet Co., Jersey City, joined the soap and glycerine division of the War Production Board on Dec. 1. Mr. McConologue, a graduate of Rutgers University, had been with C-P-P since 1937, and was recently the company's representative at meetings of the Rubber Reserve Corp., at which specifications were prepared for the use of soap in the manufacture of synthetic rubber. In 1933, following graduate studies at Rutgers, where for a time he served as an instructor in the Chemistry Department, he joined Carman & Co., makers of laundry supplies, as a chemist. He was with Carman until 1937, when he joined Colgate as a chemist. He worked up through the ranks to special work on production control and later devoted his effort to allocation of production.

western advertising classic represented the best in outdoor advertising art produced during 1942. Judging was done on two points: effectiveness of the advertising idea in relation to its merchandising and sales producing value; and execution of the idea. Prize-winning poster is pictured below.



Unbranded Soap Causes Row

A controversy was precipitated recently with the revelation that the Agricultural Marketing Administration through Federal Surplus Commodities had asked for bids on soap, to be shipped to the Caribbean area, that was not to bear the manufacturer's name or trade mark. Instead, the "Victory" soap, as it is to be called, will show "AMA, Washington, D. C.," as the distributor. The wrapper is to carry a "Victory" label, with an eagle in color and the usual instructions in Spanish. Although the soap was understood to be destined for the Caribbean area, reports indicate that Puerto Rico appears to be the sole recipient.

Puerto Rico and Governor Rexford Tugwell have been and are now economic and political storm centers. Incidentally at the present time a Congressional investigation is taking place regarding conditions on the island.

Originally, soapers had submitted suggestions, at the behest of various governmental departments, as to the best method of using limited shipping space brought about by the war. Nothing was done about the

plan submitted by the industry to parcel space out to various manufacturers on a percentage basis. The next thing the industry heard was the news of the wire asking for bids on 1,700,000 pounds of toilet soap.

Reaction of soap makers to the leaving off of brand and maker names is one of violet opposition. Several refused to have anything to do with the bidding, and others submitted only token bids on small quantities. The prevalent feeling was that since so much time, money and effort had been put into selling their brands that to suddenly stop using their brand or maker names would be most illogical. Besides, manufacturers could send out their trade-marked soap in a few days without the added expense of new mats and color printing.

Wrisley Transportation Committee

Employees of the Allen B. Wrisley Co., Chicago, have organized a transportation committee to care for their own transportation problems and work with ODT and OPA on tire and gasoline rationing. All applications for tire recapping or "B" gasoline rationing cards are handled by the committee, which also arranges for car sharing.

Barber Suppliers Meet

Distributors of barber supplies and cosmetics in Illinois and adjoining states who gathered in Chicago, December 2, for a "war problems" meeting of the Beauty & Barber Supply Institute, received a pessimistic report on the future of their business. Allocation to war use of oils, fats, glycerine and other ingredients of their products, would, it was stated, leave them a considerably reduced output in 1943. While women will suffer more than men, the latter will feel the curtailment most in shampoos, certain soaps, after-shaving lotions and hair dressings, Joseph Byrne, secretary of the Institute, explained. He cited British experience where it was found desirable to relax restrictions on raw materials when it was realized that cosmetics and other beauty supplies were necessary to maintain morale. "It is becoming more and more recognized," Byrne said, "that beauty and barber shops must continue to function. Something will have to be done about the forthcoming shortages here. We are hoping that our government will follow the course adopted in England and liberalize the rules permitting the use of materials our industry needs to keep up the nation's morale."

Announcement

ALL publishers currently face the imperative necessity of reducing their paper consumption as the output of the paper mills continues to drop in the face of expanding demands of the war industries. It is up to the individual publisher to figure out the best means of meeting this situation.

We have three choices. We can operate on the editorial content by reducing the amount of editorial material or by reducing the legibility of the type. We can print on lighter weight paper and so materially reduce the attractiveness of the publication. Or, we can eliminate complimentary circulation. We have decided on the latter course as best calculated to meet the new conditions.

To meet this reduction in our paper supplies and to allow for a normal increase in paid circulation we have eliminated all complimentary distribution. This includes extra copies to advertisers and their agencies, occasional samples to subscription prospects, etc. In this way we can continue publishing SOAP & SANITARY CHEMICALS in its present form and will be able to supply copies for a normal number of new subscribers.

Shulton Ad Campaign

Shulton, Inc., New York, makers of Early American Old Spice toiletries, are currently giving publicity to their participation in production of war materials. Using the phrase "Toiletries and Tools for Victory" as the slogan, advertising insertions have appeared in 171 newspapers, asking the public's patience if they have been unable to secure Shulton toiletries, and promising to supply them in 1943 to "the utmost of their ability." Shulton has converted part of its plant and machinery to the production of war materials, the remainder of the equipment turning out civilian toiletries.

Dow Gets Double "E"

Dow Chemical Co., Midland, Mich., received two joint Army-Navy "E" awards at a simple ceremony on the steps of the Dow Administration Building, at Midland, on December 29.

Soapers Face New Curbs on Edible Oils, Glycerine Yields— Appoint Industry Committee

THE soap industry faces a series of new restrictions on its consumption of fats and oils, its rate of glycerine recovery, and its use of packaging materials and transportation facilities, members of the Soap and Glycerine Industry Advisory Committee were told by WPB officials at a meeting in Washington early last month. Of prime importance to the industry is the recommendation that no edible fats or oils be permitted to be used in soap making. An industry sub-committee has been appointed to consider "the effect of the elimination of edible fats and oils on soap manufacture." Its personnel consists of C. J. Huff, Procter & Gamble, chairman; Dan Flick, Armour & Co.; R. H. Young, Davies-Young Soap Co.; and N. S. Dahl, John T. Stanley Co.

A second committee will study further restrictions which might be incorporated in Order M-193, which establishes standards for glycerine recovery. Increased lend-lease demands have made the glycerine situation more critical over recent weeks, it is reported, but there is apparently an unwillingness on the part of government officials to cut into stocks of edible oils to keep glycerine output at a high level. The current position is that while it might eventually be necessary to divert edible oils to glycerine manufacture to meet war needs, there is no intention to do so to meet civilian requirements. The industry sub-committee appointed to consider "how order M-193 should be amended to increase the recovery of glycerine" consists of Dan Flick, Armour & Co., chairman; N. S. Dahl, John T. Stanley Co.; and W. C. Hardesty, W. C. Hardesty Co.

Elimination of all unnecessary transportation of raw materials and finished products is another topic

which is receiving special attention. A third sub-committee has been named to study and report at the next meeting of the industry advisory committee on the elimination of needless cross hauling, and the practicality of shifting production away, as much as possible, from areas of labor and fuel shortages. This same committee has also been charged by the WPB with the study of "the practicality of elimination of manufacture of liquid soap." The WPB apparently seems to have some idea that eliminating shipment of soaps of high water content might make some appreciable contribution to relief of the transportation problem. The personnel of this committee is as follows: E. A. Moss—Swift & Co.—Chairman; A. R. Robson—Fels & Co.; R. R. Deupree—Procter & Gamble; F. A. Countway—Lever Bros.; R. H. Young—Davies-Young Soap Co.; and

E. H. Little—Colgate-Palmolive-Peet Co.

A fourth sub-committee is studying "possibilities of reducing the use of paper board for packaging" and the "possibility of the elimination of wax paper wrappers on soap." The committee which will suggest recommendations for a proposed order consists of the following: E. H. Little—Colgate-Palmolive-Peet Co.—chairman; F. A. Countway—Lever Bros.; and E. B. Hurlburt—J. B. Williams Co.

With these important questions facing the industry, it is unfortunate that over recent weeks the operations of the Soap and Glycerine Unit of WPB have been upset by the imminent prospect of having control over the soap industry transferred from WPB to the newly created Food Administration. A jurisdictional controversy has arisen between the two government agencies in recent weeks, with strong sentiment in the new group favoring the idea that it should take away from the WPB control over a wide group of industries, including the soap industry, using inedible farm products. This dispute is due to be settled one way or another within a very short time, it is promised, and the present rather discouraging prospect seems to be for a shift of the soap industry to Food Administration control, with all the re-adjustments that will inevitably be necessary in the transfer and realignment of the administrative group.

INDUSTRY MEETS JAN. 21

A meeting which every member of the soap and glycerine industry has been invited to attend will be held at the Hotel Mayflower, Washington, D. C., January 21. It will begin with a luncheon at 12:00 Noon, and will be presided over by R. R. Deupree, president of the Association of American Soap and Glycerine Producers. Among the speakers will be E. W. Wilson, chief of the Soap and Glycerine Unit of WPB, and Gus Goldberg of the Soap and Glycerine Section of OPA. Those planning to attend are asked to advise the office of the soap association. An organization meeting of the Association's Potash and Liquid Soap Division will be held the morning of the 21st.

T.G.A. Discusses Self-Rationing

Reaction of the industry to a plan for voluntary self-rationing based on replies received from questionnaires sent out by the Toilet Goods Association was generally favorable, according to association secretary Stephen L. Mayham. However, it is a little early to foretell any action that may be taken as a result of the plan. Since any step in this direction by an organization such as the T.G.A. would constitute a violation of the Sherman Anti-Trust Act, no such action will be taken by the association directly.

Chicago Chemical Show

THE second National Chemical Exposition, held recently in Chicago, included numerous exhibits featuring the progress chemical manufacturers have made in developing new materials and processes of interest to makers of soaps and sanitary chemicals.

Armour & Co.'s display of "Neo-Fats" stressed the fact that this line of fatty acids, derived from fractionation of the oil from corn, cottonseed, soybeans, linseed and other unlimited domestic sources, has vastly increased the available supply of soap making materials. A number of new fatty acids have been added to the series since "Neo-Fats" were first announced, two years ago. E. W. Freundt, sales manager of Armour's "Neo-Fat" division, stated.

The Permutit Co., New York, made their first public presentation of recently developed acid-regenerated cation exchangers and suitable anion exchangers which have widened the field in which ion exchange materials may be used. F. I. L. Lawrence, in charge of market development for the new products, said application of cation and anion exchangers has been demonstrated in some 11 fields, where wet processes are used, including the insecticide industry. Glycerine producers, Mr. Lawrence said, would be interested in use of the new ion exchangers for removal of ash from the product, especially from their economic aspect, where the demineralization involves small quantities. New literature on the ion exchangers was distributed and demonstrations were also made at the booth of Permutit's water softening technique with the company's new types of zeolite water softeners.

The Koppers Co., Tar and Chemical division, Pittsburgh, made no display of actual products, but the brightly illuminated background of their booth emphasized how the company has "Enlisted for Victory." Of 55 of the more important products of coal carbonization, 26 are under WPB allocations or limitations, visitors

learned. Also prominent was a large photomural showing the new Koppers plant recently erected at Everett, Mass., for production of ammonium thiocyanate, essential ingredient in a well-known synthetic insecticide. Its possible use to prevent rancidity of unsaturated fatty acids, utilized by soap makers, has also been investigated, he added, but no conclusions have yet been reached. In charge here was T. H. Bartholomew of the sales department and G. Thiessen of the technical staff.

Atlas Powder Co.'s industrial chemicals department devoted their exhibit largely to presentation of Atlas "Spans" and "Tweens," new surface active agents, recently developed, which make possible the use of water to bring about solutions and even application of important base materials. Because of their chemical structure, it was explained, an almost unlimited number of modifications and combinations is possible to meet special conditions. They may be used as emulsifiers and also as wetting agents and detergents. John Sweenhart, advertising manager, from Wilmington, and W. C. Griffin, of the industrial chemical research laboratory, were in charge.

Commercial Solvents Corp., New York, in their display of "New Chemicals At Work," told of many significant applications of their new series of nitroparaffin compounds by a variety of consuming industries. Four nitroparaffins and 12 derivatives are available on a commercial scale, it was stated, and some of the derivatives are proving useful in various chemical syntheses. One group was said to show great promise in the emulsification of oils, fats, waxes and resins, while the higher fatty acid soaps of another group are producing excellent automotive polishes. Noted in the exhibit of products manufactured by customers of Commercial Solvents was a liquid dry cleaning detergent made by the Davies-Young Soap Co., of Dayton. O. C. B. Goodale, manager of Commercial Solvent's technical service department,

supervised the work of a large staff of salesmen and demonstrators.

S. C. Johnson & Son, Inc., Racine, Wis., provided a large display of their special waxes for war equipment, including waxes for sealing field ration cartons and shipping containers for foods and other military supplies. Also shown were metal polishes for uniform buttons and insignia, rifle bore cleaners, polishes for metal air craft surfaces, etc.

The Dicalite Co., Los Angeles and Chicago, provided a complete specimen display of all "Dicalite" products, also specimens of many products using "Dicalite" as an ingredient or which have been clarified with "Dicalite Filteraids." E. T. Franklin, vice president in charge of the Chicago office, demonstrated how "Dicalite" replaces critical materials. A 32-page booklet on "Modern Mineral Filters" was distributed.

The Association of American Soap & Glycerine Producers, with the cooperation of Miner Laboratories, Chicago, arranged an exhibit picturing how "Glycerine Goes To War." No active promotion of glycerine was attempted but, as a reminder of the product's past industrial conquests, a second display was provided, ranging from soaps to cigarettes and tooth pastes, which utilize this by-product of the soap kettles. Dr. Georgia Leffingwell, editor of the Association's publications, was on hand from New York and assisting her in the receiving line were representatives from Chicago offices of Procter & Gamble Co., Armour Soap Works, Lever Bros. Co., Swift & Co., and the Colgate-Palmolive-Peet Co.

"Wanted For Victory — The Chemicals America Wastes" was the theme of another large exhibit sponsored by the War Production Board's Industrial Salvage division, which suggested ways for cooperating with the war effort in reclamation of wasted solvents and other chemical trade wastes.

The American Chemical Society provided a dramatic display of "Alternates and Substitutes," testifying to the ingenuity and resourcefulness of American industry in finding materials



YOU CAN'T PHOTOGRAPH MORALE



It is an intangible quality in free men that makes a Corregidor...a Wake Island... that keeps the people of Malta still smiling and "thumbs up" on a decimated isle . . . that sends a Chinese striping to harass a far better equipped foe . . . or that makes the guerrilla bands in the steep recesses of the Yugoslavian mountains and the unyielding defenders of Stalingrad—the terror of the Wehrmacht.

Morale makes for victory, and our industry has a recognized responsibility in the effort. In this war, women play a more important role than ever before, and Britain for one, has become keenly aware of the value of cosmetics.



We must not stay production. When prize formulae are affected by shortages and priorities, we are charged with the finding of suitable substitutes . . . acceptable alternatives.

Many manufacturers, turning to us, as experts in the field of synthetics for more than a quarter of a century, have been able, through us, to secure reproductions of unavailable or price-prohibitive ingredients. Accurate . . . Available, *Florasynthetics* are not secondary replacements, but have long been recognized as *primary* essentials in the successful manufacture of perfume, lotions and other toiletries.

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Metso Granular ($\text{Na}_2\text{SiO}_3 \cdot 5\text{H}_2\text{O}$), original sodium metasilicate, white, granular, free-flowing product.

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GC ($\text{Na}_2\text{O} \cdot 2\text{SiO}_2$), powdered sodium silicate. Hydrated, alkaline, rapidly soluble.

G ($\text{Na}_2\text{O} \cdot 3.22\text{SiO}_2$), hydrated powdered sodium silicate, rapidly soluble.

The popularity of PQ Silicated cleansers and compounds grows and grows. The principal difference between PQ Silicates and other alkalis is properly balanced soluble silica content which contributes these five big advantages to your private brands:

1. Restrains corrosive action
2. Effectively buffers to sustain cleaning power
3. Rinses freely
4. Prevents dirt from redepositing on clean surfaces
5. Priced economically as basic chemical

PQ Soluble Silicates are easy to work with, mix well with soaps, other alkalis, sequestering and wetting agents. Send now for descriptive bulletins, for samples, for prices. All grades are available for prompt deliveries.



PHILADELPHIA QUARTZ CO.

SILICATES OF SODA

125 S. THIRD STREET, PHILA., PA.

and means for carrying on operations despite shortages and restrictions of customary supplies.

Two products of McCormick & Co., Baltimore,—“Bee Brand” insect spray and Red Pea Aphid powder—were shown to illustrate the use of “Thanite” as a replacement for pyrethrum and D H S activator as an extender for pyrethrum base sprays.

Hercules Powder Co.’s cellulose acetate extruded plastic tubing was exemplified with a dental cream tube now employed by Colgate-Palmolive-Peet Co., as a substitute for collapsible tin tubes. American Can Co. was also represented with samples of their newly developed fiber cans, now substituting for tin in many applications.

One exhibit which attracted universal attention was a 7-foot high electron microscope in the booth of RCA Laboratories, Princeton, N. J. Dr. Vladimir K. Zworykin, associate director, addressed a conference of the Chicago section of the American Chemical Society, held during the exposition. Reporting on some achievements of this new tool of the research scientist, Dr. Zworykin told how its magic eye had revealed why two lots of a certain insecticide differed so greatly in their effectiveness. Lead arsenate was used in both, he said, and under the microscope the one which had proven to be an excellent insecticide of great covering power was shown to be composed of particles in the form of small, extremely thin plates. The other, less effective material consisted of relatively thick granular particles.

The Chicago Chemical Exposition was sponsored by the Chicago section of the American Chemical Society. Victor Conquest, director of research for Armour & Co., was chairman of the general exposition committee.

J. A. Crowley Dies

John A. Crowley, regional supervisor and Chicago district manager for the J. B. Ford Sales Co., Wyandotte, Mich., died in a Chicago hospital December 2, following a brief illness. He was 49 years old and is survived by his widow, five sisters and two brothers.

Tighten Glycerin Control

Control over glycerin was tightened to limit deliveries without specific WPB authorization to 1,150 pounds per month, by terms of General Preference Order M-58, as amended by the WPB, December 11. The previous order exempted from direct WPB allocation control any shipment by a producer of 10,000 pounds or less per month. With glycerin supplies growing constantly tighter, the amount which may be delivered under this exemption is now reduced to 1,150 pounds.

An exemption has been granted in the case of deliveries of between 50 and 1,150 pounds per month when glycerin is to be used by a hospital, clinic, laboratory of similar institution, or is used by pharmacists in compounding prescriptions, or for the manufacture of other medicinal preparations. Use by manufacturers under this exemption is, however, limited to 100 per cent of the amount used in the base period. All other users of glycerin under this 1,150 pound exemption and for which specific authorization to accept delivery is not required, are limited to 70 per cent of the amount used in the base period. Consumers of from 50 to 1,150 pounds of glycerin per month must certify to producers or distributors that they are complying with the terms of this order. No restrictions apply to acceptance of 50 pounds per month or less. The order

prohibits the use of glycerin in anti-freeze mixtures.

A revised form PD-363A is to be filed by suppliers under the new order. Form PD-600 is to be filed by consumers of over 1,150 pounds per month. It is most important, according to the WPB, that these forms be filed by the 15th of the month preceding the one in which delivery is sought. Holders of inventories of glycerin of over 1,150 pounds must file form PD-600 by the 15th of the month whether or not new allocations are sought.

C-P-P Votes Employee Bonus

All office and factory employees of Colgate-Palmolive-Peet in the employ of the company December 1, who are not on a regular commission or bonus plan and who worked the equivalent of 12 months during the 18 months immediately preceding December 1, will receive a bonus in the form of a week’s pay, by vote of the directors, it was announced recently. In making the announcement, E. H. Little, president of C-P-P, said the bonus would also apply to all employees in the armed services.

Bims of N. Y. Dine Jan. 21

The annual Goodfellowship dinner of the BIMS of New York, will be held the evening of Thursday, January 21, 1943, at the Hotel Lafayette, University Place and Ninth Street.



CREDIT TO MARK CROSS

In our article "Soaps for Glove Cleaning" in the October issue of Soap and Sanitary Chemicals, the glove drawing reproduced above was used without due credit to Mark Cross, New York specialty shop. We make this belated acknowledgment to Mark Cross and to their advertising agents, Fuller & Smith & Ross, for use of their art work.

ODOR MASKS for TECHNICAL PRODUCTS...

TODAY, it's an accepted practice—and a highly profitable one when properly applied—to use scientifically compounded aromatics as a means of counteracting or “blanketing” the odors that characterize certain technical products. The use of this principle is reaching into more and more fields . . . in such every-day products as liquid insecticides, sprays of various types, polishes, waxes, glues, petroleum distillates, plastics, solvents, and many others. In studying the masking problems of hundreds of different products and providing deodorants specifically suited to each, we have developed the following specialties, outstanding for their effectiveness, economy and adaptability:

NEUTROLEUM is a general purpose deodorant which completely and permanently deodorizes a great variety of technical mixtures, including insecticides based upon petroleum distillates. Its use permits reduction of from 40 to 70% of the perfume subsequently used for aromatization.

NEUTROLEUM is extremely economical. It is available in two types—**NEUTROLEUM ALPHA** for use when no additional aromatics are employed, and **NEUTROLEUM GAMMA** for neutralizing odors without perceptibly imparting an aromatic character. One pound of **NEUTROLEUM ALPHA** effectively deodorizes 1000 pounds of floor wax; two pounds of **NEUTROLEUM ALPHA** or **GAMMA** are sufficient to deodorize 8000 gallons of cleaner's naphtha or petroleum distillate. Kerosene for fly sprays may be deodorized at the rate of one ounce per 50 gallons.

For insecticides based upon Thanite or

Lethane, we have perfected the following inexpensive, yet highly efficient deodorants:

THANITE DEODORANT No. 14155 will neutralize the odor of Thanite without imparting a definite perfume note. It may be used at the rate of 1/10 of 1% per unit quantity of the finished spray.

THANITE DEODORANT Nos. 14153 and 14154 will impart a pleasant scent to the spray as well as neutralize the odorous Thanite when used in same proportions as above.

DEODORANT No. 13454 is an even more economical product than the foregoing. Less than 1/10 of 1% produces a practically neutral spray.

DEODORANT P-36 is offered especially for sprays based upon Lethane 384 Special. It gives excellent results when used at the rate of 1 to 1 1/4 ounces per gallon of *undiluted* Lethane.

Write us on your letterhead for samples and full instructions for the use of any of the above odor masking specialties.

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.
FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE



In our Country's Service



Announce New Restrictions on Metal Containers

SOAP, soap products and sanitary products are no longer permitted to be packed in tin or terneplate cans and only eight classes of soap or sanitary products can even be packed in blackplate cans, as a result of changed restrictions in the latest draft of Container Conservation Order M-81. Of the eight classes of products, only two, paste soap and grain fumigant can be packed in cans after June 30, 1943. Thus, the latest and most drastic container order, in one stroke removes one of the most commonly used methods of packing for all but a few products in the soap and allied fields. Responsible for this piece of container surgery is amended Conservation Order M-81, published December 9. Broadly, it sets up three lists of products that may still be packed in metal; gives the amount of pack (metal area) permitted; the type of metal that can be used and specifies can sizes. There are two food product lists, the third deals with "non-food" products. Only products found on one of these three lists (schedules) may still be packed in metal cans.

Restrictions upon manufacture, sale or delivery include: the use of a "purchaser's certificate"; no bails, ears or handles on any cans smaller than five gallons. Exceptions to the restrictions permit use, purchase and delivery of cans for packing any product which is not to be sold; fiber or paper bodied cans with ends made of waste; for packing any food product for human consumption, and antiseptic or medicinal powders; cans completed before December 9, 1942, where they are not used for products listed, and shall not apply to open top sanitary cans; for products for Army, Navy, Maritime Commission, Marine Corps, or War Shipping Administration of the U. S.; notwithstanding specified can sizes in

SCHEDULE III—NON-FOOD CANS

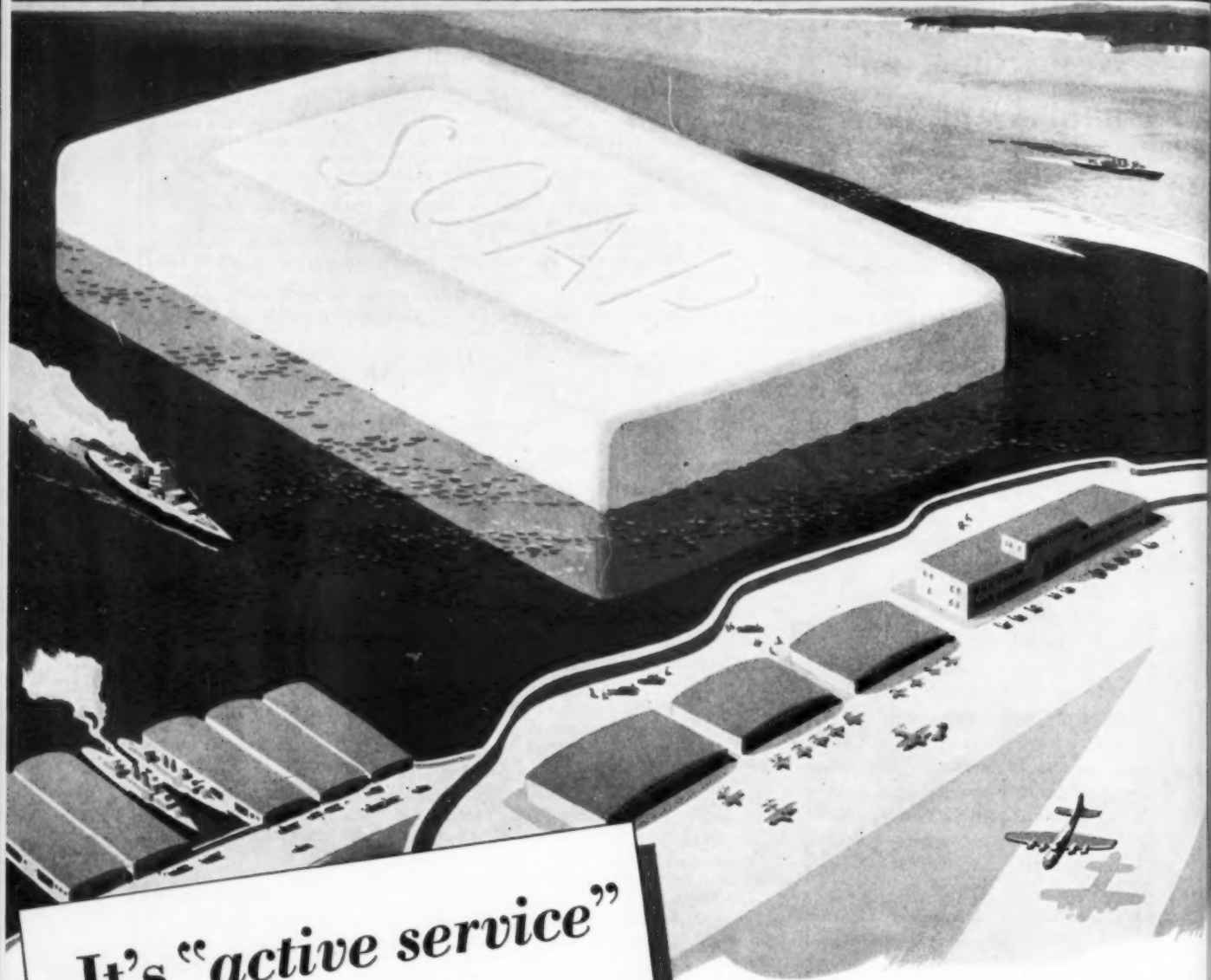
(1) Packing quotas specified in this Schedule III indicate permitted packs of the respective products listed, for all purposes except for the Army, Navy, Marine Corps, Maritime Commission, War Shipping Administration of the United States, or for any agency of the United States purchasing for a foreign country, pursuant to the Act of March 11, 1941, entitled "An Act to Promote the Defense of the United States" (Lend-Lease Act). While restrictions pertaining to can sizes and can materials are applicable to such cans, cans used for packing the respective products listed shall be in addition to the specified quotas, when delivered pursuant to a letter of intent approved by, or a contract or purchase order negotiated with or for, any of the foregoing agencies. The word "none" indicates that no cans shall be used for packing the applicable product except for the above-mentioned agencies. When determining a quota for packing a product listed in this Schedule III, cans packed during the base period (1942) for the above-mentioned agencies shall be excluded.

(2) Whenever blackplate is specified for making the body or ends of a can for packing a product listed in this Schedule III, Special Coated Manufacturers' Terneplate, may be substituted for making any part or fitting of the can which is required to be soldered.

(3) No compound containing crude rubber, latex, or synthetic rubber as defined in Order M-15-b, shall be used in the manufacture of cans for packing any product listed in this Schedule III.

Product	Packing quota	Can sizes	Can materials	
			Body	Ends
1. Abrasives, and grinding and buffing compounds. Not to be packed dry.....	100%	1942..Any size	..Blackplate	..Blackplate
2. Acid nitro-hydrochloric (outer container)	100%	1942..1 lb. ....	..Blackplate	..Blackplate
3. Bee feeder cans, friction top, for use in shipping bees.	100%	1942..2-2½-3 ...	.050 tin	....CTB
4. Benzol, naphtha, toluene, and xylene.	100%	1942..1 gal.	SCMT	....Blackplate
5. Blood plasma	Unlimited	.Any size	.050 tin	....CTB
6. Calcium carbide	100%	1942..2 lb.-10 lb.	..Blackplate	..Blackplate
7. Calcium cyanide	100%	1942..1 lb.-2½ lb.	SCMT	....Blackplate
8. Calcium hypochlorite, Grade A	100%	1942..3¼ lb-5 lb.	SCMT	....Blackplate
9. Carbon bisulfide	100%	1942..1 lb.	SCMT	....Blackplate
10. Cements and dressings, limited to belting, furnace, linoleum, pipe joint, and radiator. Not to be packed dry.	100%	1942..1 qt.-1 gal.	..Blackplate	..Blackplate
11. Cements, rubber, solvent or latex.	100%	1942..1 qt.-1 gal.	..Blackplate	..Blackplate
12. Chlorpicrin, Bromacetone, Monochloroacetone, and acrolein.	100%	1942..1 lb.	SCMT	....Blackplate
13. Chloroform and ether.....	100%	1942..Any size	..1.25 tin	....1.25 tin
14. Chromic acid (outer container).	100%	1942..1 lb. ....	..Blackplate	..Blackplate
15. Fire extinguisher fluid, limited to chlorinated hydrocarbon type.	100%	1942..1 qt.-1 gal.	SCMT	....SCMT
16. Gasket assembling compounds.	100%	1942..1 qt.-1 gal.	..Blackplate	..Blackplate
17. Glues and adhesives, liquid.	100%	1942..1 qt.-1 gal.	SCMT	....SCMT
18. Grain fumigant, liquid.....	100%	1942..1 gal.-5 gal.	SCMT	....SCMT
19. Graphite, with liquid content.	100%	1942..1 qt.-1 gal.	..Blackplate	..Blackplate
20. Greases, lubricating.	100%	1942..10 lb-25 lb.	..Blackplate	..Blackplate
21. Inks, printing, duplicating and lithographing. Slip cover style cans of sizes based upon cans which hold the indicated weights of water.	50%	1942..8 oz.-12 oz., 1 lb.-2 lb., 5 lb.-10 lb., 25 lb.-50	..Blackplate	..Blackplate
22. Lye, and drain cleaners. Until June 30, 1943.....	50%	1942..13 oz. ....	..Blackplate	..Blackplate
23. Toilet bowl cleaners. Until June 30, 1943.....	50%	1942..10 oz. ....	..Blackplate	..Blackplate

DOW CAUSTIC SODA



It's "active service"
for soap, too!

Soap is one of the essential commodities that must be handled by the military supply lines. It is indispensable for keeping our armed forces healthy and in top-notch fighting condition.

Abundant quantities of soap, for service on land and sea, are being produced with the help of Caustic Soda. This important industrial chemical, of which

Dow is a major supplier, serves the soap industry as a saponifier, a process material and a refining agent.

Dow has production facilities strategically located to serve this and other vital industries. Thus availability—plus quality and uniformity—make Dow a preferred source of supply. Inquiries will receive prompt attention.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York City • Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle



CHEMICALS INDISPENSABLE
TO INDUSTRY AND VICTORY

the order, cans manufactured before December 9, can be used, subject to quota restrictions.

Soap, soap products and sanitary products are listed in Schedule III under the following conditions. Lye and drain cleaners can be packed in cans until June 30, 1943. The packing quota is 50 per cent of 1942. One can size, 13-oz. is permitted. Blackplate body and ends are specified. Toilet bowl cleaners can be canned until June 30, 1943. The permitted pack is 50 per cent of 1942 quota, in a 10-oz. blackplate can. Shoe polish, leather dressing and saddle soap are permitted use of cans until March 31, 1943. The packing quota is drastically cut to 25 per cent of 1942. Blackplate cans in any size are permitted. Paste soap with a packing quota of 100 per cent of 1942 is to be put up in a can size of three pounds. Blackplate body and ends are specified. Grain fumigant, which is allowed 100 per cent of 1942 packing quota is permitted to be packed in can sizes of one and five gallons made from SCMT (Special Coated Manufacturers Terneplate).

Emery L. Ford Dies

Emery Leyden Ford, 66, president of the Michigan Alkali Co., Detroit, died there, December 20, following a heart attack. He was the grandson of the founder of Michigan Alkali, Captain John B. Ford. Following his graduation from Princeton in 1896, Mr. Ford went to work in the alkali plant, which his grandfather had founded. He served the firm successively as chemist, purchasing agent, secretary-treasurer and vice-president before becoming president in 1939. At his death, he also was president of the J. B. Ford Company, a subsidiary of the alkali firm and the Huron Portland Cement Company. Surviving are a son, Emery Moran Ford, a grandson, Thomas Evans Ford, and three sisters.

Urge Wider Fatty Acid Use

In order to further reduce consumption of fats and oils from which glycerine can be obtained, the Petroleum Administration for War, recommended December 4, that all manufacturers of lubricating greases reduce

24. Nicotine sulphate. ....100%	1942..5 lb. ....1.50 tin	1.50 tin
25. Nitric acid, fuming (outer container). ....100%	1942..1 lb. ....Blackplate	Blackplate ..
26. Oils, essential, distilled or cold pressed. ....100%	1942..1 qt. ....0.50 tin	0.50 tin
27. Oils, transformer. ....100%	1942..5 gal. ....0.50 tin	0.50 tin
28. Paints, copper bottom or antifouling. ....100%	1942..1 gal. ....1.25 tin	1.25 tin
29. Paints:—	Until February 15, 1943, blackplate ends for 1 gal. fiber-bodied cans. From January 1, 1943 to February 15, 1943, a person may use a number of 1 gal. fiber bodied cans sufficient to pack 10 per cent of the volume (gallage) of the paints listed in this Item 29, which he packed in all sized cans during the calendar year of 1942.	
30. Phosphorus ....100%	1942..1 lb. ....SCMT	SCMT
31. Shoe polish, leather dressing, and saddle soap. Until March 31, 1943. ....25%	1942..Any size ..Blackplate	Blackplate
32. Soap, paste. ....100%	1942..8 lb. ....Blackplate	Blackplate
33. Sodium and potassium metals. ....100%	1942..1 lb. ....SCMT	Blackplate
34. Sodium peroxide (outer container). ....100%	1942..1 oz. ....Blackplate	Blackplate
35. Soldering pastes and boiler sealing compounds. ....100%	1942..Any size ..Blackplate	Blackplate
36. Dangerous chemicals, for shipment by Express, when a metal can is required by Interstate Commerce Commission Regulations and no alternate package is permitted. ....100%	1942..Any size ..Blackplate	Blackplate

their use of fatty oils commencing January 1, 1943. To effect this cut, not less than 50 per cent is to be fatty acids. Heavy duty, high temperature, Army, Navy, and Lend-Lease greases have been excepted from this recommendation.

C. Fischbeck Breaks Ankle

Charles Fischbeck, vice-president of P. R. Dreyer Inc., essential oil house, New York, is recovering from a broken bone in his right ankle which he suffered recently as the result of an accident stepping off a ferry boat in New York.

Shulton Holds Xmas Party

The fifth annual Christmas party of Shulton, Inc., was held Saturday afternoon, December 19, on the Belvedere Roof of the Hotel Astor, New York. More than 800 executives and employees of the company attended the luncheon. An address of welcome was given by George Schultz, vice-president, in the absence of his father, William L. Schultz, president, who was in Florida.

Two More 20 Yrs. at MM&R

A dinner in honor of Miss Maryanne James and Mark Stanley Barker on the occasion of their entry into the Magnus, Mabee & Reynard 20-Year Club, was held December 2, at the Hotel Warwick, New York. Miss James is assistant to the treasurer, Mr. Barker, metropolitan New York sales manager. Nine active members of the 20-Year Club and one retired member, Edgar A. Lessels (1898-1934) were at the head table. William F. Fischer, MM&R's general sales manager and oldest active employe in term of service, was toastmaster. Percy C. Magnus, president, and Henry J. Becker, senior sales representative, both 20-year men, addressed the group. Arthur Downey and George Bieber, two other 20-year members, conducted the induction of the new members.

Essential Oil Men Meet

The election of new officers of the Essential Oil Association of the United States took place at the annual meeting, Friday evening, January 8, at the Hotel Warwick, New York.

PROTECTED *by* CROWN



U. S. SIGNAL CORPS PHOTO 123820

THAT familiar phrase "Protected by Crown" takes on a new meaning!

For Crown has furnished and is supplying millions of canisters to hold the filter elements of gas masks for military, naval and civilian use.

"Protected by Crown" never meant more than it does in this case... a grim thing to think about... but an important part of the big wartime job that the Crown Can organization is doing!

Crown engineers designed and built much of the special machinery required to make these canisters... and brought to that task the skill and experience acquired in the production of Crown Cans for more ordinary... and more peaceful purposes.

CROWN CAN COMPANY, PHILADELPHIA, PA.
Division of Crown Cork and Seal Company



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★ ★ ★ ★ ★ ★ ★ ★ ★ ★

CROWN CAN

BIDS AWARDS

Fungicide Award to Alba

Alba Pharmaceutical Co., New York, was awarded the contract for a portion of 1000 gallons (water solution) general and fungicide disinfectant at \$5.27 in a recent opening of the New York Navy Purchasing Office, New York.

Low Scouring Compound Bid

In a recent opening by the New York Navy Purchasing Office, New York, for miscellaneous supplies, Chemical Manufacturing and Distributing Co., Easton, Pa., was awarded the contract for 25,000 pounds of scouring compound at 2.88c.

Low N. Y. Navy Bids

The following low bids were submitted in recent openings by the New York Navy Purchasing Office, New York, for miscellaneous supplies: Swift & Co., on an unspecified quantity of granular soap, \$8.91 cwt.; Gold Par Products Co., New York, \$5.125c a pound for starch and Washine National Sands, L. I. City, N. Y., 375 pounds of sodium silico fluoride, \$20.44; Con-ray Products Co., New York, 6.4c and Procter & Gamble Distributing Co., New York, 13.184c on 176,440 pounds of grit and toilet soap.

Announce A.M.A. Awards

The following awards were made on recent openings by the Agricultural Marketing Administration, Washington, D. C., for miscellaneous supplies. John T. Stanley, New York, blue mottled soap, 275,000 pounds at 6.15c; John T. Stanley, New York, blue streaked soap, 600,000 pounds at 6.15c; Tennessee Soap Co., Memphis, 800,000 pounds of blue streaked at 5.15c; Procter & Gamble Distributing Co., Cincinnati, 250,000 pounds of blue streaked at 6.1c; Colgate-Palmolive-Peet Co., Jersey City, N. J., 1,550,000 pounds blue streaked at 6.18c; Miller Soap Products, Los An-

geles, California, 100,000 pounds blue streaked at 6.32c; Colgate-Palmolive-Peet Co., Jersey City, N. J., 50,000 pounds of scouring cleanser at 3.53c and 150,000 pounds at 3.47c; Colgate-Palmolive-Peet Co., Jersey City, N. J., 320,000 pounds of toilet soap at 11.69c; Corn Products Refining Co., New York, 150,000 pounds of starch at 5.3125c, and 700,000 pounds at 2.79c and 50,000 pounds at 5.6c.

Low Soap Dispenser Bids

In a recent opening by the Navy Department Bureau of Supplies & Accounts, Washington, D. C., for miscellaneous supplies, Bobrick Manufacturing Corp., Los Angeles, submitted the low bid of \$1.25 on four items of liquid soap dispensers.

Watkins Gets Supply Award

J. R. Watkins Co., Winona, Minnesota, submitted the low bid of 22c for 1,800 cakes of shaving soap, which bid was accepted, in a recent opening of the District Government Supply, Washington, D. C.

Solvay Low on Washing Soda

In a recent opening by the Department of Commerce Division of Purchases, Washington, D. C., for miscellaneous supplies, Solvay Sales Corp. received the award for 1,414,000 pounds of washing soda crystals in 280 pound barrels with a low bid of 1.51c.

Low Navy Bids

Low bids of 2.5c were submitted in a recent opening by the New York Navy Purchasing Office, New York, by Keppler Brothers, New York, for 13,000 pounds cleansing powder (type C).

C-P-P Low on Navy Soap

Colgate - Palmolive - Peet Co., Kirkman & Son Division, Brooklyn, New York, submitted the low bid of 5.69c on 1,411,500 pounds of laundry

soap in 12 ounce bars in a recent opening by the N. Y. Navy Purchasing Office, New York, for miscellaneous supplies.

Lever Gets A.M.A. Award

The Department of Agriculture's Agricultural Marketing Administration recently awarded Lever Brothers, Cambridge, Mass., a contract for 1,120,000 pounds of toilet soap at 14c a pound.

Unity Gets Dispenser Award

Unity Sanitary Supply Co., New York, received the recent award of the Philadelphia office of the Marine Corps for soap dispensers with a bid of \$3.

Dishwashing Compound Awards

A series of awards for dishwashing compound in a recent opening of the Veterans Administration, Washington, D. C. went to J. B. Ford Sales Co., Wyandotte, Michigan and Economics Laboratory, St. Paul, Minnesota.

Navy Floor Compound Award

Sanitary Floor Compound Co., Paterson, N. J., was awarded the contract for 800,000 pounds of sweeping compound in a recent opening by the U. S. Navy Department in Washington, D. C., for delivery to the New York Navy Yard, Brooklyn.

Liquid Soap Bids

Among the low bids submitted in a recent opening by the New York Navy Purchasing Office, New York, for 9,400 gallons of liquid soap, Cole Laboratories, Long Island City, N. Y., entered a bid of 99c a gallon; Crystal Soap & Chemical Co. bid 7.22c a pound on 49,000 pounds; and Harley Soap Co., Philadelphia, bid 8.3c a pound with an alternate bid of 7.6c.

Detroit Rex Moves L.A. Office

Detroit Rex Products, metal cleaning manufacturers, have moved their Los Angeles office to new and larger quarters at 1506 Santa Fe Ave. S. B. Crooks, became manager of the Pacific Coast area, January 1, 1943. He was former Mid-Western manager with offices in Chicago.

FIXORESINS by Schimmel

FIXORESINS are *light*...

[[they do not discolor even light colored toilet soaps.]]

FIXORESINS are *stable*..

[[they have been especially developed for soap-making and keep their lasting quality in the presence of alkalis.]]

FIXORESINS are *effective*

[[they round off and strengthen the soap perfume and give it an almost everlasting quality.]]

FIXORESINS are *economical*

[[even for the most inexpensive soaps, the cost is usually smaller when they are used instead of a perfume.]]

FIXORESINS have been developed for every type of soap perfume including:

Bitter Almond

Jasmine

Pine

Carnation

Lavender

Rose

Citrus

Lily of the Valley

Sandalwood, I. E.

Eau de Cologne

Neroli

Vetiver

Gardenia

Orange Flower

Violet

Hyacinth

Patchouly

Ylang-Ylang



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Chicago
Cincinnati
Cleveland
Los Angeles
St. Louis

TRADE MARKS

The following trade - marks were published in the December issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks

No. 5—This in block letters and numeral to describe a toilet soap. Filed by Chanel, Inc., New York, September 29, 1942. Claims use since 1941.

GOOD BYE ATHLETE FOOT—This in block letters on a circular design for an ointment used in the treatment of athlete's foot. Filed by Elmer W. Lawson and Charles Monrow, Turlock, Calif., April 1, 1942. Claims use since January 25, 1942.

HAND-SAVER—In block letters for a cream for application to the hands. Filed by Vanguard Sales Corp., New York, September 2, 1942. Claims use since July 10, 1942.

NYDENTA—This in bold letters to describe a toothpaste. Filed by Nyal Co., Detroit, September 21, 1942. Claims use since November 9, 1926.

NYSEPTOL—This in bold block letters for antiseptic mouth wash. Filed September 21, 1942, by Nyal Co., Detroit. Claims use since March 10, 1931.

VIKING—This in fanciful lettering to describe pine disinfectants, insecticides, deodorant blocks, and pipe and bowl cleaners. Filed by S. W. Schwank Corp., Baltimore, September 25, 1942. Claims use since January 1, 1940.

NO-EXCUSE—This in block letters for spray deodorants. Filed by Clyde Rowell, doing business as Rex-clif Products Co., Portland, Ore., September 26, 1942. Claims use since September 7, 1942.

NIALK—This in open lettering for caustic soda, bleaching powder, paradichlorobenzene, insecticides and deodorants. Filed by Niagara Alkali Co., Niagara Falls, N. Y., October 7, 1942. Claims use since September 11, 1942.

JEEP—This in bold letters for lipstick, cream, rouge and nail polish. Filed by Lehn & Fink Products Corp., Bloomfield, N. J., October 14, 1942. Claims use since May 28, 1942.

MAG—This in thunderbolt lettering on a gray background over a horseshoe across which is written "whitens wash" to describe a general purpose cleaner. Filed by Lavo Company of America, Milwaukee, October 21, 1941. Claims use since June 15, 1935.

APEM-AID—This in bold block letters for shampoo preparation. Filed by Apem Corp., Little Rock, Ark., December 16, 1941. Claims use since October 25, 1941.

AMAZIA—This in reverse script letters on a black background for hair rinsing solutions. Filed by Amazia Products, Buffalo, New York, October 2, 1942. Claims use since September 28, 1942.

VANTROL—This in stencil lettering for metal degreasing and metal washing compounds. Filed October 22, 1942 by Van Straaten Chemical Co., Chicago. Claims use since January 9, 1941.

GULCO—This in open letters for automobile, furniture, etc., polisher and cleanser. Filed by Gulco Chemical Co., Gulfport, Miss., October 13, 1941. Claims use since July, 1941.

MIRACLEAN—This in block letters for furniture and woodwork polish. Filed by Payson Marsh, Inglewood, Calif., September 25, 1942. Claims use since August 1, 1942.

VISIBOL—This in bold block letters in quotation marks for a mixture of chemicals for cleaning opera-

tions containing an indicator that changes color when the cleaning potency is impaired. Filed by Special Chemicals Corp., New York, June 24, 1942. Claims use since May, 1935.

RUBY BRITE—This in reverse letter on black backgrounds that partially join over a sparkling circle to describe a mixture of chemicals and abrasives used in cleaning and polishing of precious and other metals. Filed by Special Chemicals Corp., New York, June 24, 1942. Claims use since February, 1937.

JOHNSON'S WAXED FLOOR CLEANER—This in three lines the center one showing a hand at the completion of a rubbing stroke in which the words "Waxed Floor" appear for a cleaner for removing old wax and wax emulsions from floors and other surfaces. Filed by S. C. Johnson & Son, Racine, Wis., July 2, 1942. Claims use since March 11, 1940.

SPA—This as part of a fanciful design for insecticides. Filed by H. W. Baldwin, doing business as Baldwin Laboratories, Saegertown, Pa., September 25, 1942. Claims use since January 5, 1942.

PROX— This in large, bold, block letters for a solution for use as a cleanser, disinfectant, bleach and deodorant. Filed by Proxite Products Co., Brooklyn, October 16, 1942. Claims use since March, 1937.

Trade Marks Granted

398,605. Wax for floors, linoleum, woodwork, furniture, etc. Filed by Harold L. Schafer, doing business as Gold Seal Wax Co., Bismarck, North Dakota, May 1, 1942. Serial No. 452,734. Published September 1, 1942. Class 16.

398,755. Deodorant. Filed by Irresistible, Inc., Jersey City, N. J., April 26, 1940. Serial No. 431,256. Published September 15, 1942. Class 6.

398,777. Floor wax. Filed by Johnson Chemical Co., Brooklyn, March 4, 1942. Serial No. 451,397. Published September 8, 1942. Class 16.

398,786. Bluing and preparation for opening drains and cleaning sinks. Filed by Plee-zing, Inc., Chicago, May 23, 1942. Serial No. 453,-

ANTOINE CHIRIS

Antoine Chiris was established in France in 1768 and all through these years pioneered in the development of its long-known worldwide organizations. The American branch was established in New York in 1899.

CHIRIS

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PERFUME BASES

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ETS ANTOINE CHIRIS
GRASSE, FRANCE

PILAR FRERE

ANTOINE CHIRIS, LTD., LONDON, ENGLAND

212. Published September 15, 1942. Class 6.

398,807. Soap in granulated form. Filed by Plee-sing, Inc., Chicago, July 2, 1942. Serial No. 454,015. Published September 8, 1942. Class 4.

398,831. A household bleach. Filed by Federated Foods, Inc., Chicago, July 18, 1942. Serial No. 454,303. Published September 15, 1942. Class 6.

398,836. Suntan oil, brilliantine, hair lotions, etc. Filed by Cory, Inc., New York, July 21, 1942. Serial No. 454,362. Published September 15, 1942. Class 6.

398,950. Skin Cream. Filed by Pond's Extract Co., New York, N. Y., July 11, 1941. Serial No. 445,321. Published September 16, 1941. Class 6.

398,959. Hair preparation. Filed by Enero Cerrai, St. George, Staten Island, N. Y., October 17, 1941. Serial No. 447,870. Published September 29, 1942. Class 6.

398,991. Insecticides and tonic for livestock. Filed by George E. Field, doing business as Pastura Mfg. Co., Altmar, N. Y., May 25, 1942. Serial No. 453,240. Published September 29, 1942. Class 6.

399,005. Face powder, liquid skin freshener, lotions and tonics for the skin, skin creams, etc. Filed by Doralina Cosmetics, Inc., New York, N. Y., June 24, 1942. Serial No. 453,835. Published August 25, 1942. Class 6.

399,039. Insecticides. Filed by California Spray-Chemical Corporation, Wilmington, Delaware, July 27, 1942. Serial No. 454,530. Published September 22, 1942. Class 6.

399,040. Insecticides. Filed by Shell Chemical Co., San Francisco, California, July 27, 1942. Serial No. 454,546. Published September 22, 1942. Class 6.

"E" To P&G Ordnance Plant

The joint Army-Navy "E" award was presented to the Wolf Creek ordnance plant of Procter & Gamble Defense Corp., in Milan, Tenn., early last month. The award, which was presented by Col. T. C. Gerber on behalf of the U. S. Army, was received

by Richard R. Deupree, P&G president, of which the Defense Corp. is a subsidiary. Employee presentations were made by Lt. Dean E. Richardson, for the U. S. Navy. In accepting the

award, Mr. Deupree expressed the pride of the entire organization in the tribute, and pointed out that the factory site was a series of fields only two years ago.



Renderers Re-elect Pfeiffer

NATIONAL RENDERERS ASSOCIATION has been adopted as the new name of the Association of American Producers of Domestic In-



D. M. PFEIFFER

edible Fats, the change having been determined on at a meeting of the board of directors in Chicago, December 10. D. M. Pfeiffer, assistant secretary of Akron Soap Co., Akron, O., was re-elected president for his second term and R. E. Walters of Harlan Rendering Co., Harlan, Ia., was re-elected vice-president. Lieut. F. B. Wise, now serving in the U. S. Army, was continued as secretary-treasurer, on leave, and Wm. S. Snow was retained as Washington counsel. John T. La Farge, Jr., of the John T. La Farge Co., Freeport, Ill., was selected to fill one of three vacancies on the board and the other two posts are to be filled by later action.

A resolution addressed to the Association of American Soap and Glycerine Producers strongly recommended the adoption of a continuing advertising program to promote the salvage of kitchen fats and greases. Due

to the lack of such advertising, there had been a noticeable drop in collection of such household wastes in November, the resolution asserted. Meat rationing at home and increased lend-lease shipments of pork products abroad will, it was held, mean further reduction in kitchen waste collections unless the project is stimulated by constant advertising.

Discussion of price ceilings brought out charges that some renderers are going outside of their normal operating areas to obtain supplies and are buying at prices exceeding the ceiling maximums; also that prime tallow is being sold as choice white grease to gain a price advantage; and that inedible material is being sold as edible. Complaints to the Office of Price Administration, it was stated, come chiefly from the soap industry, which has charged both misrepresentation as to quality and lack of compliance with ceiling prices. Some of the trouble, speakers contended, was due to the lack of clear cut definitions of "tallow" and "grease" in the OPA schedules, but this situation promises to be corrected in revised OPA rules shortly to be put into effect.

OPA, it was reported, is preparing to "crack down" on price ceiling violators in the New York area, following a thorough and widespread investigation there and this enforcement campaign, it was said, will later be carried to Chicago and elsewhere. OPA is planning to "make a strong example," one speaker said, and if successful, "punishment would be severe." Renderers were urged to do nothing to break the spirit of the government price control measures and to observe strict compliance with all regulations as issued.



Daddy, is our soap made
from WOBURN Fatty Acids?

Yes, Rollo, and so are our shampoos, shaving cream, cosmetics, rubber
tires, synthetic resins, linoleum, oilcloth, textile lubricants, etc., etc.

OF COURSE THIS IS CARRYING THINGS PRETTY
FAR! We know that the consuming public and Little
Rollo actually know very little about whose Oil and Fat Chemicals go into
their products. *But within the industry EVERYONE DOES KNOW ABOUT*
WOBURN FATTY ACIDS, for they are a recognized standard in quality, price
and performance.

The Leading name in the Fatty Acids and Synthetic Drying Oil industry is

WOBURN

DEGREASING CO. OF N. J.

HARRISON, N. J.

RAW MATERIALS FOR THE SOAP INDUSTRY

FATTY ACID SUBSTITUTES FOR COCONUT OIL

Mixtures of Vegetable oil fatty acids to replace coconut
and other high-glycerine content oils now unavailable to
many soap makers. It will pay you to investigate these
replacement materials at once. Write for samples and
prices.

Caster Oil
Corn Oil
Cottonseed Oil
Olive Oil

Olive Oil Feeds
Peanut Oil
Rapeseed Oil
Sesame Oil

Soya Bean Oil
Fatty Acids
Lard Oils
Neatsfoot Oil

Oleo Stearine
Stearic Acid
White Olein
Tallow

Boric Acid
Modified Soda

Silicate Soda
Metasilicate
Tri Sodium Phosphate

WHITE MINERAL OIL

DRY ALKALIES

A recent innovation in Welch, Holme &
Clark service is the mixing of dry alkalies
for private formula products. Let us handle
this operation for you.

Grease
Lanolin
Caustic Soda
Soda Ash

Borax
Caustic Potash
Carbonate Potash
Sal Soda

Di Sodium Phosphate
Chlorophyll
Superfating Agent

PETROLATUM

WELCH, HOLME & CLARK CO., Inc.

563 GREENWICH STREET ESTABLISHED 1838 NEW YORK CITY

MARKETS

As of January 4, 1943

PRE-HOLIDAY and year-end market conditions, prevailing as usual, during the period just concluded, precluded the possibility of much if any trading. Other than seasonal factors, however, had a part in the dearth of activity. Ceiling prices and supply shortages, especially in fats and oils, despite record demands, shared in the prevalent quiet condition of the market. However, beneath the surface bits of news kept cropping up that foreshadow future trends.

Not the least important of these was the story out of Washington late last month that a cut of 15 per cent in the consumption of food fats and oils in 1943 is likely. This prediction was made by the Bureau of Agricultural Economics. Loss of imports from the Far East as well as unprecedented demands have contributed to the prospective shortage, the bureau stated. In a report on fats and oils the bureau estimated that all 1943 requirements, including military, civilian and lend-lease, would be at least 800 million pounds more than the supply, estimated at 14,500,000,000 pounds. The military requirement includes a goal of 1,500,000,000 pounds for a government contingency or emergency reserve.

Production of fats and oils from domestic materials in the 1942 crop year was estimated at 11,700,000,000 pounds, compared with 9,600,000,000 pounds for 1941. Higher goals have been set for 1943 by the Department of Agriculture.

The meaning of this prediction by the Department of Agriculture becomes increasingly clear when a little more than two weeks later, on January 2, a cut of an estimated 70,000,000 pounds of oil for the manufacture of soap was effected through an amendment to Conservation Order M-71.

SOAP FAT QUOTAS

An amendment to WPB Order M-71, which went into effect January 1, 1943, reduces from 88 to 84 per cent the permitted consumption of fats and oils in soap making operations. In each 1943 quarter soap makers may now use only 84 per cent of the average quantity of fats and oils used in the corresponding quarters of the two years, 1940 and 1941. The new amendment also makes certain changes in the requirements for reports which soap manufacturers must file.

The most recent amendment restricts the use of fats and oils (other than foets) in the manufacture of soap for civilian consumption to 84 per cent of the average amount used in the base period. This third cut comes on the heels of an original 90 per cent limit that was later reduced to 88 per cent. In making the announcement of the cut, the War Production Board revealed that an additional 230,000,000 pounds of oil could be used by the manufacturers of margarine. This allowance was made to relieve pressure caused by the shortage of butter.

Talk of the use of linseed oil in soap and a report that on January 1, 1943 less than a month's supply of castor oil, at the normal rate of consumption, was on hand, further amplify the critical nature of the shortage. The result is that through the present (84 per cent) and possible further cuts in the use of fats and oils by the soap industry the production of glycerine will inevitably decline. A reduction in glycerine production will bring about outcries from the munitions makers, who in turn,

will appeal for aid for themselves and the glycerine producers. The restoration of the fats and oil consumption cuts may be brought about in this way, although it will be time consuming and unnecessary.

Paralleling the recent rise in flaxseed prices, linseed registered a further increase to mark about the only noteworthy activity among the vegetable oils. Cottonseed and soybean maintained what is getting to be a "traditional" quietness.

Grease and tallow offerings were light, a condition that has been prevalent in recent weeks, and prices remained at or about ceiling levels.

Essential oils and aromatic chemicals concluded the year uneventfully. A continued sturdy price structure is anticipated as long as the slim supply condition prevails. Relief, in the form of substitution, may continue stronger during 1943, it is expected, since both supplies of substitutes and quality are good.

War Glycerine Prices Cut

A cent-a-pound cut in the price of glycerine to the government by the six largest producers, five of whom are soap makers, will result in a great saving by the government it was announced recently by the OPA. The companies involved are: Armour Soap Works, Colgate-Palmolive-Peet, Harshaw Chemical Co., Lever Brothers, Procter & Gamble Co., and Swift & Co. Prices of glycerine were reduced substantially in October, when the product was brought under Price Schedule 38. The new reduction set prices at: 17½ cents a pound in tank cars for c.p. glycerine (98 per cent glycerol), 17¾ cents in car load lots of drums and 18¼ cents in less than car load lots. All other grades will be 17, 17¼ and 17¾ cents, respectively.

KRANICH

Shampoo

Liquid Olive Oil Soap

Liquid Vegetable Oil Soap

40% and 30% (Only)

To replace coconut oil soaps

Powdered Soap

U. S. P. Castile (Only)

Potash Soaps

Soft Potash 40%

Hard Potash 70%

U.S.P. XI Green

Scrub Soaps

Plain, Pine, Sassafras

KRANICH SOAP COMPANY

55 Richards St.

Brooklyn, N. Y.

SOAPS



Caustic Potash

FLAKE • SOLID • GRANULAR • BROKEN
CRUSHED • WALNUT (88-92% KOH)

Containers of various capacities

Caustic Soda

SOLID 76% • CRYSTALS 76% • FLAKES 76%
LIQUID 50% Solution

Carbonate of Potash

CALCINED 98-100% K_2CO_3 •
HYDRATED 83-85% K_2CO_3
LIQUID 47-48% K_2CO_3

Natural Waxes

and EXCELLENT SUBSTITUTES

to replace those now off the
market or nearly unobtainable

NAPHTHALENE
PARADICHLOROBENZENE
ORTHODICHLOROBENZENE

INNIS, SPEIDEN & COMPANY

Established 1816

117 Liberty Street

NEW YORK

CHICAGO • CLEVELAND • CINCINNATI
BOSTON • PHILADELPHIA • GLOVERSVILLE, N. Y.

RAW MATERIAL PRICES

(As of January 4, 1943)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums.....lb.	\$.08½	\$.09
Acid, Boric, bbls., 99½%.....ton	109.00	131.00
Cresylic, drums.....gal.	.81	.83
Low boiling grade.....gal.	.81	.83
Muriatic, C. P., carboys.....lb.	.06½	—
Oxalic, bbls.....lb.	.11¼	.12½
Adeps Lanae, hydrous, drums.....lb.	.29	.32
Anhydrous, drums.....lb.	.30	.33
Alcohol, Ethyl, drums.....gal.	11.99	12.05½
Complete Denat., SD1, dms., ex. gal.	.65	.70
Alum. Potash lump, bbls.....lb.	.04½	—
Ammonia Water, 26°, drums.....lb.	.02¼	.02½
Ammonium Carbonate, tech., drums.....lb.	.08¼	.09¼
Bentonite.....ton	25.00	51.00
Bleaching Powder, drums.....100 lb.	2.25	3.35
Borax, pd., bbls., bags.....ton	50.00	76.00
Carbon Tetrachloride, car lots.....gal.	.73	1.17
L. C. L.....gal.	.80	1.27
Cresol, U.S.P., drums.....lb.	.10%	.11¼
Cresote Oil.....gal.	.141	.15½
Feldspar, works.....ton	30.00	35.00
Formaldehyde, bbls.....lb.	.05½	.06
Fullers Earth.....ton	8.50	15.00
Glycerine, C.P., drums.....lb.	.18%	.19¼
Dynamite, drums.....lb.	.18%	.18%
Saponification, drums.....lb.	.12%	.14%
Soap lye, drums.....lb.	.11½	—
Lime, live, bbls.....ton	6.25	14.50
Mercury Bichloride, drums.....lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.....lb.	.08	—
Orthodichlorbenzene.....lb.	.06	.08½
Paradichlorbenzene, drums.....lb.	.11	.15
Petrolatum, bbls. (as to color).....lb.	.03%	.07¼
Phenol (Carbolic Acid) drums.....lb.	.12¼	.13¼
Pine Oil, drums.....gal.	.55	—
Potash, Caustic, solid.....lb.	.06¼	.06½
Flake, 88-92%.....lb.	.07	.07½
Liquid, 45% basis.....lb.	.03¼	.03½
Potassium Carbonate, solid.....lb.	.06¼	.06%
Liquid.....lb.	.03	.03½
Pumice Stone, coarse.....lb.	.04¼	.05
Rosins (net. wt., ex dock, New York)—		
Grade D to H.....100 lb.	3.95	4.08
Grade I to N.....100 lb.	4.05	4.12
Grade WG to X.....100 lb.	4.30	4.40
Rotten Stone, dom., bags.....lb.	.0128	.019
Silica.....ton	20.00	27.00
Soaps—		
Tallow Chip, 88%.....lb.	.11	.11%
Powder, 92%.....lb.	.11%	.12
Powdered, White Neutral.....lb.	.25½	.42
Olive Oil Paste.....lb.	.40	—
Shampoo Base.....lb.	.18	.20
Liquid Concentrate, 30-32%.....gal.	.75	.79
Soda Ash, cont., wks., bags, bbls. 100 lb.	1.05	1.45
Car lots, in bulk.....100 lb.	.90	—
Soda Caustic, cont., wks., solid 100 lb.	2.30	—
Flake.....100 lb.	2.70	2.95
Liquid, tanks, 47-49%.....100 lb.	1.92¼	1.95

Soda Sal., bbls.....100 lb.	1.20	1.40
Sodium Chloride (Salt).....ton	14.20	18.00
Sodium Fluoride, bbls.....lb.	.08	.09¼
Sodium Hydrosulfite, bbls.....lb.	.17	.18
Sodium Metasilicate, anhyd.....100 lb.	4.00	5.30
Granulated.....100 lb.	2.50	3.55
Sodium Pyrophosphate.....100 lb.	5.28	6.80
Sodium Silicate, 40 deg., drum.....100 lb.	.80	1.20
Drums, 52 deg. wks.....100 lb.	1.40	1.80
Tar Acid Oils, 15-25%.....gal.	.27½	.33½
Triethanolamine.....lb.	.18	.20
Trisodium Phosphate, bags, bbls. 100 lb.	2.70	4.15

Oils — Fats — Greases

Babassu, tanks, futures.....lb.	.1110	Nom.
Castor, No. 1, bbls.....lb.	.15%	.16
No. 3, bbls.....lb.	.13%	.14%
Coconut (without excise tax)		
Manila, tanks, N. Y.....lb.	No Prices	
Tanks, Pacific Coast, futures.....lb.	No Prices	
Copra, bulk, coast.....lb.	No Prices	
Corn, tanks, West.....lb.	.12%	.15%
Cottonseed, crude, tanks, mill.....lb.	.12%	—
PSY, futures.....lb.	.13%	.14%
Fatty Acids—		
Corn Oil, tanks, Chicago.....lb.	.14½	.15
Coconut Oil, tanks, Twitchell, Chi. lb.	.18½	.19
Cotton Oil, tanks, Chicago.....lb.	.14	.14½
Settled soap stock, Chicago.....lb.	.03%	.04
Boiled soap stock, 65%, Chi.....lb.	.04%	.05
Foots, 50%, Chicago.....lb.	.03½	.03%
Castor Oil, split, tanks, N. Y.....lb.	.20%	.21%
Linseed Oil, split, tanks, N. Y.....lb.	.18½	—
Distilled.....lb.	.21	.21½
Myristic acid, distilled, tanks, N.Y. lb.	.19	.19½
Palm Oil, white tanks, N. Y.....lb.	No Prices	
Single distilled.....lb.	No Prices	
Soybean Oil, split, tanks, N. Y.....lb.	.10	—
Distilled.....lb.	.15	—
Red Oils, bbls., dist. or sapon.....lb.	.11%	—
Tanks.....lb.	.11¼	—
Stearic Acid, saponif.		
Double pressed.....lb.	.14	—
Triple pressed.....lb.	.17	—
Greases, choice white, tanks.....lb.	.08%	—
Yellow.....lb.	.08¼	—
Lard, city, tubs.....lb.	.138	—
Linseed, raw, bbl.....lb.	.1310	.1330
Tanks, raw.....lb.	.1220	.1240
Olive, denatured, bbls., N. Y.....gal.	3.50	4.00
Foots, bbls., N. Y.....lb.	.19	Nom.
Palm, Sumatra, cif. New York, tanks lb.	No Prices	
African, tanks, ex. ship.....lb.	.08¼	Nom.
Palm, kernel.....lb.	No Prices	
Peanut, crude, tanks, mill.....lb.	.13	Nom.
Soya Bean, domestic, tanks, crude.....lb.	.12¼	Nom.
Stearin, oleo, bbls.....lb.	.1054	—
Tallow, special, f.o.b. N. Y.....lb.	.08½	—
City, ex. loose, f.o.b. N. Y.....lb.	.08%	—
Teaseed Oil, crude.....lb.	No Prices	

STEARIC ACID

(DISTILLED)

CAKE, FLAKE AND POWDERED
TECHNICAL AND U.S.P. GRADES

WHITE PALM OIL FATTY ACIDS

(DISTILLED)

REFINED TALLOW
FATTY ACIDS

WHITE OLEINE U.S.P.
(DOUBLE-DISTILLED)

OLEIC ACID
(RED OIL)

We Recover All Glycerine for War Purposes

Manufacturers Since 1837

A. GROSS & CO.

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Representatives in Various Cities

A PUMICE

TO MEET EVERY NEED



Not until Valencia — the standard of American Pumice— was discovered at Grants, New Mexico, was it thought that a domestic pumice could match the quality of imported Italian Pumice. This inexhaustible deposit at Grants is true pumice stone and not a volcanic ash. It is physically and chemically equal in every respect to the now unobtainable Italian Pumice. • The Valencia plant's output of grades for every need is rigidly under control for particle size, purity, weight and color.

Check this table comparing Valencia with the highest grade of imported Italian Pumice. See for yourself that Valencia is truly the standard of American Pumice.

	American Pulverized Per Cent	Italian Select Per Cent
Silica	72.90	73.24
Alumina	11.28	10.61
Iron Oxide	.86	1.57
Titanium Oxide	.06	.10
Calcium Oxide	.80	1.10
Magnesium Oxide	.36	.40
Soda	3.64	3.03
Potash	4.38	5.58
Sulphuric Anhydride	.03	.05
Loss on ignition	5.20	4.04

PUMICE CORPORATION OF AMERICA

GRANTS, NEW MEXICO, U. S. A.

DISTRIBUTED BY

Whittaker, Clark & Daniels, Inc. • 260 West Broadway, New York City
Warehouses: Detroit, Michigan and South Kearny, N. J.

(As of January 4, 1943)

Essential Oils

Almond, Bitter, Artificial.....lb.	\$3.50	\$3.75
Bitter, F.F.P.A. ....lb.	4.75	5.00
Sweet, cans .....lb.	1.90	2.00
Anise, cans, U.S.P. ....lb.	3.10	3.50
Bay, 55-66% phenols, cans.....lb.	1.60	2.10
Bergamot, coppers.....lb.	32.00	Nom.
Artificial.....lb.	2.25	6.50
Birch Tar, rect., cans.....lb.	—	—
Crude, cans.....lb.	—	—
Bois de Rose, Brazilian.....lb.	4.75	5.00
Cayenne.....lb.	—	—
Cade (juniper tar), drums.....lb.	1.50	Nom.
Cajeput, tech., drums.....lb.	—	2.10
Calamus, cans.....lb.	—	—
Camphor, Sassy, drums.....lb.	—	—
White, drums.....lb.	—	—
Cananga, native, cans.....lb.	17.00	17.50
Rectified, cans.....lb.	18.25	20.00
Cassia, Redistilled, U.S.P.....lb.	10.50	12.00
Cedar Leaf, cans.....lb.	1.05	1.35
Cedar Wood, light, drums.....lb.	.75	1.00
Citronella, Java, drums.....lb.	—	—
Citronella, Ceylon, drums.....lb.	1.20	1.40
Clove, U.S.P., cans.....lb.	1.80	2.00
Eucalyptus, Austl., U.S.P., cans.....lb.	1.15	1.40
Fennel, sweet, cans.....lb.	3.60	—
Geranium, African, cans.....lb.	30.00	Nom.
Bourbon, cans.....lb.	24.00	—
Turkish (Palmarosa).....lb.	5.25	5.50
Hemlock, cans.....lb.	1.20	1.25
Lavender, 30-32% ester, cans.....lb.	9.00	9.25
Spike, Spanish, cans.....lb.	4.25	4.35
Lemon, Ital., U.S.P.....lb.	—	Nom.
Cal.....lb.	3.00	—
Lemongrass, native, cans.....lb.	2.75	3.25
Linaloe, Mex., cases.....lb.	4.25	—
Nutmeg, U.S.P., cans.....lb.	4.75	6.00
Orange, Sweet, W. Ind., cans.....lb.	6.00	6.25
Italian cop.....lb.	8.00	Nom.
Distilled.....lb.	1.00	—
California, expressed.....lb.	1.65	—
Origanum, cans, tech.....lb.	2.75	2.90
Patchouli.....lb.	8.00	8.50
Pennyroyal, dom.....lb.	—	—
Imported.....lb.	3.15	3.25
Peppermint, nat., cans.....lb.	5.50	5.75
Redis., U.S.P., cans.....lb.	6.00	6.25
Petitgrain, S. A., cans.....lb.	1.95	2.20
Pine Needle, Siberian.....lb.	3.00	3.25
Rosemary, Spanish, cans.....lb.	2.25	2.30
drums.....lb.	2.10	2.15
Sandalwood, dom., dist., U.S.P.....lb.	6.25	6.50
Sassafras, U.S.P.....lb.	2.00	2.20
Artificial, drums.....lb.	2.00	—
Spearmint, U.S.P.....lb.	—	3.15
Thyme, red, N. F.....lb.	3.25	3.50
White, N. F.....lb.	3.50	3.75
Vetiver, Java.....lb.	42.00	50.00
Ylang Ylang, Bourbon.....lb.	—	—

Aromatic Chemicals

Aceotphenone, C. P.....lb.	\$1.55	\$1.60
Amyl Cinnamic Aldehyde.....lb.	—	—
Anethol.....lb.	2.25	2.40
Benzaldehyde, tech.....lb.	.45	.55
N. F. VI.....lb.	.85	2.75
Benzyl, Acetate.....lb.	.59	Nom.
Alcohol.....lb.	.63	.75
Citral.....lb.	5.50	7.00
Citronellal.....lb.	2.75	3.25
Citronellol.....lb.	7.00	7.25
Citronellyl Acetate.....lb.	—	—
Coumarin.....lb.	2.75	3.25
Diphenyl oxide.....lb.	.43	.50
Eucalyptol, U.S.P.....lb.	2.25	2.65
Eugenol, U.S.P.....lb.	2.75	2.80
Geraniol, Soap.....lb.	1.10	1.50
Other grades.....lb.	1.50	3.50
Geranyl Acetate.....lb.	—	—
Heliotropin.....lb.	5.25	Nom.
Hydroxycitronellal.....lb.	7.25	8.75
Indol, C. P.....lb.	28.00	30.00
Ionone.....lb.	2.75	3.95
Isoborneol.....lb.	.81	.90
Iso-bornyl acetate.....lb.	.80	.95
Iso-Eugenol.....lb.	—	—
Linolool.....lb.	6.75	7.00
Linalyl Acetate.....lb.	5.50	7.25
Menthol, natural.....lb.	—	—
Synthetic, U.S.P.....lb.	—	—
Methyl Aceophenone.....lb.	—	—
Anthranilate.....lb.	2.20	2.35
Paracresol.....lb.	—	—
Salicylate, U.S.P.....lb.	.35	.40
Musk Ambrette.....lb.	4.00	4.45
Ketone.....lb.	4.15	4.60
Xylol.....lb.	1.40	1.80
Phenylacetaldehyde.....lb.	5.00	6.00
Phenylacetic Acid.....lb.	1.85	1.90
Phenylethyl Alcohol.....lb.	2.10	2.50
Rhodinol.....lb.	—	—
Safrol.....lb.	2.25	2.45
Terpineol, C.P., dra.....lb.	.40	—
Cans.....lb.	.43	—
Terpinyl Acetate, 25 lb. cans.....lb.	.87	—
Thymol, U.S.P.....lb.	3.00	Nom.
Vanillin, U.S.P.....lb.	2.35	2.75
Yara Yara.....lb.	1.80	1.85

Insecticide Materials

Insect Powder, bbls.....lb.	.29	.30
Pyrethrum Extract.....gal.	5.90	6.00
20 to 1.....gal.	8.85	9.00
30 to 1.....gal.	—	—
Derris, powder—4%.....lb.	.31	—
Derris, powder—5%.....lb.	.35	—
Cube, powder—4%.....lb.	.31	—
Cube, powder—5%.....lb.	.35	—
Squill, red, dried.....lb.	.85	1.00

Waxes

Bees, white.....lb.	.57	.63
African, bgs.....lb.	.3750	—
Refined, yel.....lb.	.5250	.6050
Candelilla, bgs. (crude).....lb.	.38	—
Carnauba, No. 1, yellow.....lb.	.8325	.8925
No. 2, N. C.....lb.	.7575	.8175
No. 3, Chalky.....lb.	.7125	.7725
Ceresin, yellow.....lb.	.13½	.18
Montan Wax, bags.....lb.	.45	.46
Paraffin, ref., 125-130.....lb.	.0620	.0560



NUCHAR

ACTIVE CARBON

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BY
ADSORPTION

INDUSTRIAL CHEMICAL SALES DIVISION
WEST VIRGINIA PULP AND PAPER COMPANY
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748 Public Ledger Building
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PRODUCTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

New Uses for Phosphates

SOME of the lesser known and unusual uses of phosphate salts are of interest, for example the following: lubrication of wool and other textile fibers with oils preparatory to carding and drawing in order to prevent breakage. The perfect oil for this has not yet been found, but formerly no one has proposed the use of an alkali metal salt in aqueous solution. Dipotassium phosphate is the novel proposal in British Patent No. 511,566.

A saturated aqueous solution at 22° C. contains 63.6 per cent of dipotassium phosphate, K_2HPO_4 , or 172 grams per 100 grams of water. The anhydrous salt is very hygroscopic. It is proposed to use an aqueous solution of dipotassium phosphate having 40-50 per cent of water. The patent is not clear as to whether a supersaturated solution is proposed or whether the excess of phosphate is to be regarded as suspended in the solution proper.

Concentrated solutions of this salt are stated to possess an "oily" feel and merely to film over the fiber, not penetrating it. The pH value is 9.0, which means that machinery is not corroded and fiber is not affected. Dipotassium phosphate is non-oxidizing, colorless and free from odor. For removal from the fiber, the impregnated material need only be run through a bath of water. There is little chance of the solution evaporating and leav-

ing dry solid behind unless the atmosphere becomes very dry. With a relative humidity fairly high, the hygroscopic nature of the anhydrous salt will prevent its drying out. Presumably the salt could be recovered from wash liquors because it is stable up to the boiling point of its solution.

A little known and useful quality of sodium pyrophosphate is to improve the lathering power of alkyl naphthalene sulfonic acid wetting agents such as Perminol and Naccosol. Experimental data show that whereas the lathering power of a one-half per cent solution of sodium isopropyl naphthalene sulfonate is 595, with the addition of 0.05 per cent of sodium pyrophosphate, this is raised to 850 on the same scale. Preparations containing such mixtures have been patented, British Patent No. 447,072.

Sodium metaphosphate is said to be capable of existing in a certain crystalline form in which it is insoluble in water but gives viscous solutions in the presence of other salts. When boiled, these solutions lose their viscosity and undergo a change during which calcium and magnesium ions are taken up and transformed into soluble complexes of great stability. This form of metaphosphate therefore constitutes a means of sequestering lime salts at high temperatures, a feat hitherto very difficult. Such salts as sodium or potassium metaphosphate in this special

form are known as Kurrol or Maddrell salts. The sequestering power is said to equal that of sodium hexameta-phosphate and yet these compounds may be used in washing operations in hard water at 80-100° C. Alternatively, they may be added to boiler-feed water in amounts equivalent to the metal salts present, British Patent No. 543,218. J. Wakelin. *Textile Colorist*, pp. 511-12, 550 (1942).

The surface-activity of soap solutions as expressed by lowered surface tension can be readily demonstrated by dusting a clean water surface with sulphur, then touching the surface with a glass tube filled with soap solution. The water surface instantly contracts away from the soap. If a colored soap solution is introduced into the depths of the water by means of a glass tube, there is no such rapid pulling outwards. This shows the difference in the effect at the surface as distinguished from the interior of the liquid.

When two substances physically and chemically indifferent to one another are added to water, the one which is capable of producing the greater lowering of surface tension will tend to concentrate preferentially at the surface of the solution and to exclude the other. This can be demonstrated in an aqueous solution containing both saponin and soap. The

soap lowers surface tension much more than saponin does. Such a solution containing both substances gives typical soap bubbles very free from saponin bubbles. The bubbles have the mobile air surface of soap solution instead of the rigid one of saponin. The bubbles also yield mechanical surface aggregates such as are obtained from pure soap solution, instead of solid saponin. Eric Hardy. *Am. Perfumer & Essen. Oil Review* 44, No. 11, 29-30 (1942).

Unsaponifiable Determination

The S.P.A. method for unsaponifiable matter in oils, fats and waxes, consisting essentially in extracting the dilute alcoholic soap solution with ether, washing the extract alternately with water and dilute potassium hydroxide solution three times, and then washing free from alkali, consistently gives higher results than the official A.O.A.C. and a number of other methods.

In general, ether extraction gives higher results than petroleum benzene extraction. The concentration of the soap solution extracted appears to be an important factor governing the completeness of the extraction of unsaponifiable matter. In the present study, larger percentages of unsaponifiable were obtained when the size of sample, and consequently the soap concentration, was decreased. Tests showed that the S.P.A. method effected practically complete extraction of added unsaponifiable matter, while the F.A.C. and modified Kerr-Sorber methods did not. G. Kirsten. *J. Assoc. Official Agr. Chem.* 25, 728-33 (1942).

Determination of Pyrophosphate

A method is described for the quantitative precipitation of pyrophosphate as cadmium pyrophosphate. After filtering and washing, the precipitate can be weighed in the anhydrous form when dried to constant weight at 250° C. In general it is simpler and more practical to dissolve the precipitate in dilute hydrochloric acid and determine the cadmium polarographically. A procedure is given

for the determination of 0.002 to 0.01 Molar pyrophosphate solutions in the presence of from 4 to 16 times the molar concentration of orthophosphate and from 8 to 32 times the molar concentration of calcium. Gunther Cohn and I. M. Kolthoff. *Ind. Eng. Chem., Anal. Ed.* 14, 886-90 (1942).

Hydrocarbon Sulfonates

Oleum and hydrocarbons including those of unsaturated and aromatic nature are separately dissolved in portions of liquid sulfur dioxide. Streams of the separate solutions are precooled and then combined in a reaction zone at -20 to +5°C. They are passed into a second reaction zone at a higher sulfonation temperature to complete the reaction. The mass emerging from the second reaction zone is diluted, sulfur dioxide is evaporated

from the diluted material, and the acid solution containing the sulfonated products is separated with the use of a base such as caustic soda. The material is dried to form a solid sulfonate. Robert L. Brandt, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,285,390.

Florasynth Chemist Commissioned

Dr. T. C. Smith, for six years past one of the chief chemists of the Florasynth Laboratories, Bronx, N. Y., has been commissioned a First Lieutenant in the Chemical Warfare Service. He is, at present, attached to the Procurement Division of the Huntsville Arsenal in Alabama. Dr. Smith's assistant at Florasynth, Herbert Kappelow, has also entered the Chemical Warfare Service and has been stationed at Gadsden, Alabama.

Soap Powder Methods

AN early method of making so-called soap powders, consisted in grinding in a mortar mill bars of silicated soap which might contain mottled soap, soda ash, soda crystals and sometimes gelatinous sodium silicate and borax. This method produced a good powder of its kind, but involved more labor than more modern methods.

A more modern variation still widely used is to make in a crutcher a mixture of the required composition, which is then run on to a clean floor to solidify. The mass when set, is roughly broken up by hand, requiring heavy labor. The large chunks are put through a kibbler, which may consist of two toothed rollers rotating in opposite directions. This reduces the masses to a convenient size for passing into the mill proper. The mills are high-speed machines in which there is no contact between moving metal parts.

The modern method for soap powder consists in spraying a liquid mixture of the required composition

into the air. The small globules or bubbles thus formed rapidly solidify. In a comparatively simple device, the liquid mixture is forced through an orifice in a specially designed jet in which it is caught up by an air current of high velocity. The spray enters a large chamber, and after travelling a few feet, the particles are formed and float down against a current of dry air or gas to the bottom of the chamber, where they are collected as powder on moving belts.

The only outstanding differences between powders made by spraying and the milled powders is that the former are more bulky. This is, on the whole, a disadvantage when the powders are sold to technical users such as laundries, as it necessitates larger packages,—but the extra bulk seems to appeal to some classes of retail customers. At the present time, the waste of paper in the large cartons of these bulky powders must be quite serious. N. G. Weir. *Soap, Perfumery & Cosmetics* 15, 549-52 (1942).

Re-use of Soap Scrap

APPARATUS and technique for converting soap scrap into first grade soap are described by the author of a brief article in the November, 1942, issue of *Soap, Perfumery & Cosmetic Review*, London. Equipment required is similar to that used for the semi-boiled process, with the addition of a large conical tank fitted above the crutching pan. The latter piece of equipment should contain closed steam coils for softening up the scrap and should be fitted with an outlet "treacle" valve. Other necessary equipment includes a steam-jacketed crutcher (working pressure not less than 60 lb. per sq. in.), oil and lye measuring tanks, and soap frames.

Method of operation is described briefly as follows:

1. Soap cuttings and oil loaded into conical tank and steam turned on.
2. Fatty acids, etc., run into the pan, heat applied and lye added.
3. Softened cuttings and oil emptied from conical tank into the pan below.
4. Remainder of fatty acids added to crutching pan.
5. Caustic lye added to carry out complete saponification.

A typical charge, assuming the weight of each batch of soap manufactured to be 2,464 pounds, is as follows:

726 lb. palm kernel or coconut acid oil or f.a.

364 lb. palm oil f.a.

84 lb. rosin.

730 lb. lye solution (30° Bé).

560 lb. scrap soap cuttings.

Actual time taken for running the batch described is given as one hour. Thus the small-scale soap maker may by this process re-use in a 48-hour week at least 12 tons of scrap, which can be converted into first grade soap. The author reports that his own experience with use of remelters has been unsatisfactory, as in many cases they produce only second grade soap. He adds a few interesting comments on the way British soap manufacturers have been affected by wartime opera-

tion. Cold process is "out" for the duration in Great Britain, he says, due to the necessity of maximum glycerin recovery. Instead of whole oils, the small soap maker now receives only fatty acids or acid oils from which the glycerin has already been extracted.

Crude Glycerine Recovery

Spent soap lyes were treated with rosin or oleic acid for removal of most of the alkali, the soap was separated, and concentrated hydrochloric acid added to the aqueous liquid until the latter turned blue litmus paper red. The scum was removed and a solution of ferrous sulfate containing excess sulfuric acid was added, followed by a slight excess of milk of lime. The aqueous solution was decanted or filtered and then concentrated by evaporation, any scum being removed. The precipitated salt was separated and the liquor was neutralized and again evaporated until the crude glycerine had a specific gravity of 1.3 at 15°C. The crude glycerine was purified further by the addition of an equal quantity of water and exact neutralization with sulfuric acid, when more or less oily material separated and was filtered off. The crude glycerine was evaporated again and filtered. J. H. Trebitz. *Fette und Seifen* 47, 59-60; through *Chem. Abs.*

Dairy Cleaning Methods

The advantages in dairy cleaning of softening water with a new group of polyphosphates are shown. The polyphosphates differ in their effects on different types of water and the proper one must be selected for a particular hard water. Combinations of alkaline detergents and organic detergents can be made to fit definite cleaning jobs. Protein films can be softened by the action of papain, particularly by papain plus a wetting agent. Four possible methods for preparing can-washing solutions are given. An acid can-washing solution is de-

scribed that is more effective and economical than the usual alkaline solution. Acid solutions can also be used to clean regenerators and heaters. Suitable wetting agents and polyphosphates can also be used in bottle washing to give more brilliant bottles. F. M. Scales and Muriel Kemp. *Assoc. Bull. (Intern. Assoc. Milk Dealers)* 33, 589-604; through *Chem. Abs.*

Structure of Soap Sols

The structure and the properties of a soap sol can be correlated with the structure of the macro molecule, its interaction with the surroundings and the presence of a thermodynamic equilibrium. The various theories of the structure of soap solutions are discussed. Below a critical concentration the properties in solution are determined by the ionic groups. Above this concentration small spherical micelles are formed. Their diameter is about 48 Angstrom units. At the approximate concentration corresponding to a minimum in the conductivity curve the formation of large micelles must be assumed. They have a foil-like shape. The thickness is about 250 Å. and the other dimensions are probably a multiple thereof. J. Stauff. *Kolloid-Z.* 96, 244-51.

Control of pH in Bleaching

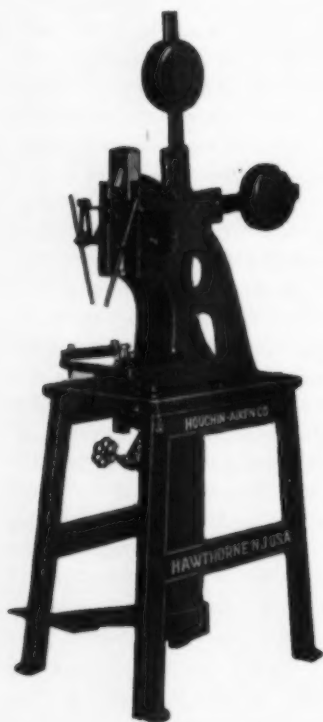
Errors in the determination of the pH of technical bleaching baths, especially of used baths, are due to the bleaching products themselves, dissolved organic products and carbon dioxide. It is impossible to determine by pH measurements whether an alkaline hypochlorite solution has been brought to a pH of 9.5-10 with acid or with buffer salts, although the two solutions behave very differently in practice. Erroneous determinations of the alkali content of bleaching solutions from pH measurements occur as the result of adsorption of the alkali on the fibers. Difficulties are involved in the measurement of pH in solutions containing active chlorine. Colorimetric and ionometric methods cannot be used in these solutions but measurements must be made with the glass electrode. J. Elmer. *Tiba* 18, 183-5; through *Chem. Abs.*

ON HAND FOR IMMEDIATE DELIVERY



H. A. Empire State Soap Press

Takes cakes any size up to 6" long. Capacity 20,000 cakes per day.

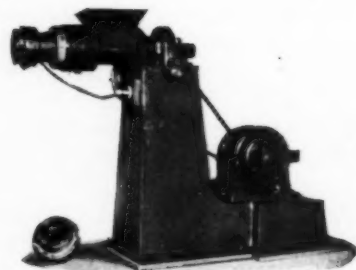


H. A. No. 4 Soap Press (left)

For pressing cakes weighing 2 to 8 ounces. Capacity 10,000 to 15,000 cakes per day.

**LET US KNOW
ANY OTHER
SOAP
MACHINERY
YOU CAN USE.**

We May Have It On Hand.



**No. 90 Plodder—
4" Laboratory Plodder**

HOUCHIN MACHINERY COMPANY, Inc.

Manufacturers of Soap Making Equipment

Fifth and Van Winkle Aves.

Hawthorne, N. J.

Leather Stain Removal

THE following directions for methods and materials to remove various kinds of spots and stains from leather should apply to other types of solvent-resistant materials, particularly cotton and linen fabrics.

Lacquer:—Lacquer is composed of pyroxylin in such solvents as ethyl alcohol, ethyl acetate, butyl acetate, amyl acetate, toluol, acetone, etc. Its color is with pigment coloring. Because of the high content of binder in lacquers, it is usually quite simple to remove lacquer stains by sponging lightly with a solution of one of the solvents in which pyroxylin is soluble. In the removal of the binder, the color pigment will be removed also.

Lipstick and Rouge:—These are composed of two types of coloring matter, iron oxide and a rhodamine red dye. In either case they should be removed by treating with non-aqueous detergents and solvents, rather than with wet solutions. Wetting will cause rhodamine red to dye the material permanently when the fatty carrier has been removed. The heavy iron oxide pigment requires considerable lubrication in order to be removed with the carrier. If possible, it is most effective to apply a benzene-soap lubricant and then to sponge out the entire area with a naphtha until the stain and lubricant have all been removed. In this case and in others, when the material has become dry, if of leather it can be refinished with an appropriate color restorer and dressing to replace color and finish removed with the stain.

Mildew and Mold:—Fresh mildew,—a species of mold,—is quite easily removed because it is merely on the surface of the material. Older mildew stains become very persistent because the mold penetrates the fibers of the materials. Apply a soap solution containing four ounces of soap per quart of soft water and manipulate with a bone scraper. If dark traces remain, apply hydrogen peroxide to bleach them. Sponge with clear water.

Mud:—This is often readily washed out with soap and water. If

the material has turned dark, a bleach of hydrogen peroxide should be applied.

Oil and Grease:—Naphtha, benzol, carbon tetrachloride, ethylene dichloride, etc., remove loose grease stains. Road oil, composed of crude petroleum, contains a high percentage of sulfur compounds and some vegetable impurities. The sulfur compounds and impurities cause a persistent stain. Sulfur compounds from old stains must be dissolved before the stain can be removed. Carbon bisulfide is the most effective solvent for the purpose. Mayonnaise and salad dressing contain acid, mustard, and in some cases egg. The stain should be sponged first with one of the common organic solvents, allowed to dry, and then sponged with soap solution.

Paint and Varnish:—Paints form a group of stains which, although they have varying ingredients, are similar enough to allow for a common technique for their removal. Paints are composed of a pigment and a liquid carrier, the latter usually being linseed oil and resinous substances. It is necessary to dissolve the carrier before the stain can be removed.

Sponge lightly with a paint-removing solution containing one part each of acetone, benzol, carbon tetrachloride, denatured alcohol, and one-fourth part acetic ether. If the stain appears persistent, dampen the area around the stain as well and manipulate the stain with a bone scraper. This should remove even old paint stains. Sponge out the treated area with naphtha, carbon tetrachloride, or fresh paint remover, taking care to feather out the edges to eliminate rings.

Perspiration:—This requires considerable rinsing and sponging to remove the salts present. Sponge the stain freely with a solution containing one tablespoonful of table salt and one tablespoonful of glacial acetic acid in one pint of water. Extract excess solution with a sponge. If the stain is persistent, apply the following perspiration remover,—a solution of one table-

spoonful of table salt and one teaspoonful of glacial acetic acid in one pint of denatured alcohol plus one pint of acetone. Sponge with this until the stain is out, then with clear water.

Shoe Polish:—These usually contain pigment, oil color, and in some cases basic dye, wax, shellac, gums, turpentine and other solvents. It is essential that the wax be broken up in order to release the pigment. A light stain may be removed by sponging with turpentine, naphtha, carbon tetrachloride, etc. A deeper stain may require manipulation with a bone scraper.

Unknown Stains:—Occasionally one is unable to identify a stain, when it is advisable to proceed with caution. Sponge first with one of the common organic solvents and let dry. Apply soap solution and manipulate with a bone scraper until the maximum amount of stain is removed. Sponge with clear water. Traces remaining may require bleaching. Leland G. Stockdale. *Laundry & Dry Cleaning J. of Canada*, November, 1942.

Gamma Sodium Stearate

The X-ray work of Thiessen and Stauff gave evidence that there are two distinct crystallographic forms of sodium stearate, called by them alpha and beta forms. A third form called the gamma form, has been discovered. The new form is produced when sodium stearate is made by the reaction between stearic acid and sodium alcoholate, followed by drying the precipitate at 105°C. A. de Bretteville and J. W. McBain. *Science* 96, 470-1 (1942).

Fat of Aquatic Animals

A monograph by J. A. Lovern summarizes the results of an investigation in progress since 1930 as to the composition of the depot fat of aquatic animals. Methods of examination of the fats are described, as well as the components and structure of the fats. Average compositions and analyses are included, as well as an outline of the occurrence of individual fatty acids, saturated fatty alcohols, unsaturated alcohols and other components. *Analyst* 67, 328 (1942).

PRODUCTS

Cleaning Tin Surfaces

Detergents suitable for use on metal ware with tin surfaces contain a noncaustic alkaline detergent such as soda ash and trisodium phosphate, with about 0.5-1.5 per cent of a chromate salt such as sodium dichromate, and up to 15 per cent of an alkali metal fluosilicate. Max Metzger and Alfred Long, to Blockson Chem. Co. U. S. Patent No. 2,285,676.

Decolorizing Agent

Liquids are decolorized by contact with a material containing hydrated magnesium silicate. This is prepared with agitation by hydrothermal reaction between a calcium-containing silicate and a soluble magnesium salt of a strong acid. The agent adsorbs coloring matter from a liquid to be decolorized. Lyle Caldwell. Canadian Patent No. 408,452.

Zinc Soap Compound

Zinc soap of coconut-oil fatty acids is combined with an amine capable of rendering the zinc soap soluble in organic solvents. Wm. P. ter Horst. Canadian Patent No. 408,542.

Bleaching Soft Soap

One of the most useful agents for bleaching soft soaps is ammonium persulfate. This can be easily crutched into the boiled and finished soap and left for 8 hours to effect the desired improvement in color and odor. With linseed-oil soft soaps this bleach is not always completely satisfactory; it is preferable in this case to give the oil a preliminary bleach before saponification.

Another useful bleach for soft soaps is sodium hydrosulfite, which is claimed to be economical in use and to give immediate bleaching action. The general procedure with white soft soaps is to spread the hydrosulfite over the soap and then crutch in. The

soap does not alter in consistency during the bleaching, it keeps like other soaps, has a fine silvery sheen, and is free from objectionable odors. It can be packed as soon as it is cold. *Am. Perfumer & Essen. Oil Review* 44, No. 11, 40 (1942).

Built Cake Soap

A nonefflorescing bar soap comprises a major proportion of a soap base, soda ash in an amount sufficient to cause objectionable efflorescence in the absence of alkali phosphate, and up to 9 per cent of a water-soluble alkali phosphate, sufficient to prevent efflorescence. Robert J. Heald to Colgate-Palmolive-Peet Co. Canadian Patent No. 408,835.

Protective Hand Creams

The following formulas for protective hand creams are (1) for normal industrial use, and (2) as a water proof protective.

	Parts by wt.
1. Lanette Wax SX.....	20
Liquid paraffin.....	5
Paraffin wax.....	5
Water.....	to 100
2. Lanette Wax SX.....	20
Liquid paraffin.....	5
Anhydrous lanolins.....	5
Water.....	to 100

These yield rather heavy creams which are pleasant in use, spread easily, and keep the hands clean during various types of work in the sense that the accumulated dirt is very easily removed by simple washing.

A worker who suffered seriously from split skin of the fingers owing to the constant washing of glasses, obtained complete relief by using the second of the two products. Trials with these carried out by workers in the printing industry proved satisfactory.

With regard to the proprietary wax, Lanette Wax itself is a mixture of higher fatty alcohols,—mainly cetyl and stearyl. In addition, the SX variety contains about 10 per cent of sodium alkyl sulfate. The bulk of the

Lanette Wax SX can be replaced by plain Lanette Wax, keeping say 2 per cent of the SX, which is a strong emulsifier. H. Stanley Redgrove. *Soap, Perfumery & Cosmetics* 15, 600-602 (1942).

Sulfonate Detergent

Tetrahydrofurfuryl alcohol is treated with a sulfonating agent such as concentrated sulfuric acid and one or more aliphatic carboxylic acids or alcohols. The derivatives obtained are suitable for use as detergents, washing, emulsifying, dispersing and penetrating agents. Kenneth L. Russell and Adam C. Bell, to Colgate-Palmolive-Peet Co. British Patent No. 544,402.

New Use for Lauryl Sulfate

Improvements in strength, resistance to wear, and freedom from scaling are claimed for concrete pavements and floors made with a new agent developed by the Master Builders Co. of Cleveland. The material is essentially a balanced combination of sodium lauryl sulfate and a derivative of lignin sulfonic acid. Although the two ingredients can be used separately, it is nevertheless claimed that they work better in combination.

Hydrogenated Rosin Soaps

A soap suitable for laundry and toilet purposes is made in part from partially hydrogenated rosin. It contains saponified hydrogenated rosin which is saturated by combination with hydrogen to an extent of about 60-95 per cent of the theoretical for two double bonds of its unsaturated rosin-acid radicals. A saponified fatty acid such as that from coconut oil is also present. Irwin W. Humphrey, to Hercules Powder Co. U. S. Patent No. 2,285,333.

Betz Water Testing Set

W. H. and L. D. Betz, Philadelphia, have just brought out a complete water testing set that is compactly contained in a special cabinet. The cabinet, which includes the necessary chemicals and apparatus for determining water hardness, alkalinity, chlorides, phosphates and sulfides, can be mounted on a wall or table.

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U.S.I. CHEMICAL NEWS

January ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1943

New Acetone Uses Indicated by Study Of Patent Files

Chemical Plays Important Part In Processes in Varied Fields

A search of the patent files reveals many new uses for acetone in a number of varied fields, somewhat of a surprising fact because acetone has generally been considered a staple chemical with a fairly well-defined field of utility. A discussion of a few of these patents may serve to indicate the variety of hitherto unexplored applications of acetone.

One such patent concerns the concentration or recovery of the values of non-metalliferous ores by froth flotation processes in which fatty acid substances are employed as promoters. The inventor states that the power of the promoters can be very greatly increased by dilut-

(Continued on next page)

Reactions Show Possibilities of Ethyl Sodium Acetone-Oxalate

Versatility Clearly Indicated by Formation of Ring Compounds

A study of the reactions of ethyl sodium acetone-oxalate, a compound having the formula $\text{CH}_3\text{COCH} = \text{C}(\text{ONa})\text{COOC}_2\text{H}_5$, shows many new interesting possibilities.

The versatility of this chemical or the acid derived from it, alpha, gamma-dioxo-valeric acid, or its esters, in the formation of ring compounds may be seen from the table below. The first line of the table, for instance, shows that hydrazine reacts with ethyl sodium acetone-oxalate to give 3-methyl-5-pyrazolecarboxylic acid. One reaction not included below is that of ortho-aminobenzaldehyde, which is reported to produce a quinoline derivative, $\text{C}_{10}\text{H}_7\text{O}_2\text{N}$, whose structure has not been completely elucidated [Monatshefte für Chemie 52, 59-67 (1929)].

Samples of ethyl sodium acetone-oxalate may be obtained from U.S.I. on request for experimental work.

Ethylene Used as Alkylator To Produce Anti-Knock Gas

CHICAGO, Ill. — A method for alkylating isobutane by ethylene in the presence of a particular type of catalyst to produce a motor fuel of relatively high anti-knock value has been developed by two men here, according to a patent that was granted recently.

ETHYL SODIUM ACETONE-OXALATE $\text{CH}_3\text{COCH} = \text{C}(\text{ONa})\text{COOC}_2\text{H}_5$

RING COMPOUNDS	SUBSTITUTED GROUPS	REAGENT	REFERENCE
PYRAZOLE 	3-methyl; 5-carboxylic acid 3-methyl; 1-phenyl; 5-carboxylic acid 5-methyl; 1-phenyl; 3-carboxylic acid	HYDRAZINE PHENYLHYDRAZINE	Knorr A.279,217 (1894) German Patent 74,619,F.3,938 *Claisen & Roosen A.278,279,288 (1893)
ISOXAZOLE 	3-methyl; 5-carboxylic acid 5-methyl; 3-carboxylic acid	HYDROXYLAMINE	*Claisen, B.24,3908 (1891)
PYRROLIDINE 	2,3-dioxo; 4-acetyl; 1,5-diphenyl 4,5-dioxo; 1-methyl; 2-phenyl; 3-acetyl	BENZALANILINE BENZALDEHYDE & METHYLAMINE	Schiff, Gigli, B.31,1307 (1898) German Patents 280971, 283305,290531 F.12,792, 793,797
PYRROLE 	4-methyl; 3-acetyl; 2-carboxylic acid	AMINOACETONE	Piloty, Blömer B.45,3752 (1912) Fischer et al., A.461:244 (1928)
1,3-DIOXOLANE 	4-oxo; 2-trichloromethyl; 5-acetyl methylene	CHLORAL	Schiff B.31,1305 (1898)
OXOLANE 	2,3-dioxo; 4-acetyl; 5-phenyl 2,3-dioxo; 5-phenyl; 4-cinnamoyl	BENZALDEHYDE in piperidine BENZALDEHYDE with dried HCl	Ruhemann J.C.S.89 1239,1240 (1906) " " " "
BENZENE 	3-methyl; 5-hydroxy; 1-carboxylic acid 5-methyl; 3-hydroxy; 2-ethoxalyl; 1-carboxylic acid	BARIUM HYDROXIDE SODIUM ACETATE	Claisen B.22,327 (1889) C.A. 32,3340 (1938)
PYRIDINE 	4-methyl; 3-acetyl; 2,6-dicarboxylic acid 4-methyl; 3-acetyl; 6-carboxylic acid 4-methyl; 5-acetyl; 2,6-dicarboxylic acid 2,6-dimethyl; 3,4-dicarboxylic acid	AMMONIA AMMONIA AMMONIA ETHYL β-AMINO-CROTONATE	Mumm, Bergell B.45,3045 (1912) C.A. 28 2171 (1932) Mumm & Hunecke B.50,1573 (1917)

*See also B.45, 3045 (1912). Abbreviations: A. — Liebig's Annalen; B. — Berichte der Deutschen Chemischen Gesellschaft; C.A. — Chemical Abstracts; F. — Friedlaender, Fortschritte der Theerfarben Fabrikation; J.C.S. — Journal of the Chemical Society.

Many New Chemical Developments Noted During the Past Year

An idea of the outstanding chemical progress made during 1942 can be gained by a brief review of the major developments summarized in the past year's issues of U.S.I. CHEMICAL NEWS. During 1942 the following topics were discussed in leading articles in this publication:

January. Reactions of urethan. Unusual possibilities of alkyl phosphates.

February. Importance of water in resin solutions. Use of chemicals in lengthening the life of fish nets.

March. Applications of ethyl benzoylacetate in dye manufacture and chemical synthesis. Luminescent finishes.

April. Ethyl carbonate as a raw material. Lined steel drums.

May. Possibilities of ethyl acetoacetate. Novel experimental vinegar generator.

June. Determination of the combined acids in cellulose mixed esters. New chemical to end corrosion of iron by lacquers.

July. Utility of ethyl sodium oxalacetate in chemical synthesis. Ethyl formate for treating yarns.

August. Carbon dioxide as a fire extinguisher and inflation agent. Availability of ethyl sodium acetone-oxalate for experimental work.

September. Resin emulsions as possible latex substitutes. Novel perfumes from Indian plant lore.

October. New method for studying drying rates of lacquer films. Use of heat treatment in improving quality of yellow pigments.

November. Preparation of ethyl oxalacetate. Puerto Rican plants yield essential oils.

December. The prevention of foam in casein paints and other protein compositions. Procedure for improving synthetic camphor yield.

(Copies of these issues are available on request)

Varnish for Maintaining Sterile Operative Field

A new skin varnish for maintaining sterility in the operative field has been developed according to the following formula:

Santizer B	16.5 g.
Acetone	605
Ethyl cellulose	165
Ethanol	715
Castor oil	16.5

Tests Show Superiority of Ethanol as Disinfectant

Ethanol is considered to be an ideal disinfectant, according to experiments in which the effect of ethanol in adsorption tests, particularly in the disinfection of hands, was studied.

One of the special advantages claimed for ethanol is its capacity to kill large numbers of bacteria. It was discovered that when two loopfuls of solid growth of staphylococci or B. coli are suspended in only two drops of 96% ethanol, complete disinfection takes place in a few minutes, whereas 1% Zephrol, 5% Sagrotan and 0.1% mercury solutions fail to achieve this.

New Acetone Uses

(Continued from previous page)

ing the flotation reagent with about 20% or less of a water-soluble ketone such as acetone.

Another patent of interest involves the preparation of sulfanilylamino-pyridine compounds. A mixture of acetone and pyridine is used to form a reaction medium for reacting p-acetylaminobenzene sulfonyl chloride with alpha amino pyridine for the production of 2-acetylsulfanilylamino-pyridine.

Printing-Ink Binders

Rapid drying properties, high gloss and water-insolubility at slightly elevated temperatures are among the advantages claimed for the use of acetone-formaldehyde resins as binders for printing inks. The formation of such an agent comprises interacting formaldehyde with acetone in the presence of an alkaline catalyst, pigmenting material, and a liquid organic solvent such as acetone.

In another patent, acetone is suggested in combination with nitrocellulose to form an adhesive for use in holding metal parts to be welded into position, such as threaded steel buttons to a background of steel ship plates.

A more simple method of producing alcohols of the acetylene series than those now in use is claimed in a recent patent. Such alcohols are prepared directly from acetone and acetylene by bringing into contact acetylene with a mixture of acetone and an aqueous solution having an alkaline reaction.

Acetone is also suggested by an inventor for the manufacture of beta-cyanoacrylic acid esters. According to this process, such esters are obtained by reacting an ester of alpha-chloroacrylic acid with a cyanide of an alkali metal or an alkaline earth metal at approximate room temperature in the presence of water and acetone.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

A moistureproof sealer particularly developed to seal waterproof papers used as liners in shipping containers is said to even protect goods against immersion. A white, colorless fluid, the adhesive seals overlapping liner seams against air, moisture and temperature extremes. (No. 650)

U S I

A liquid temperature indicator employing the same principle as pellets and sticks is intended for use in signalling temperatures. It is available in melting points from 125 to 1600° F. When applied, it dries instantly, then liquefies sharply when the desired temperature is reached. (No. 651)

U S I

A grease-impervious paper box for packaging ointments and similar substances is offered, which has an outside covering of parchment paper supplementing the chemical compound which coats the inside. Although not impervious to water and grease in the same degree, it is said to successfully package substances which have a water content up to 5%. (No. 652)

U S I

A protective paint is offered for exterior and interior surfaces having an appreciable amount of exposed metal. The primers are said to be rust inhibitive and provide a tough, elastic film which expands and contracts at the same rate as the metal. (No. 653)

U S I

Citric acid substitutes are now being produced domestically by a manufacturer who made similar products in Europe during the last World War. (No. 654)

U S I

A prepared catalyst for isomerization processes has been developed, consisting of activated bauxite impregnated with 15 to 20% of anhydrous aluminum chloride. (No. 655)

U S I

Non-ionic emulsifiers are available commercially which are said to offer very interesting possibilities in the manufacture of synthetic rubbers by polymerization of butadiene, styrene, acrylonitrile or other unsaturated compounds. (No. 656)

U S I

Static-conductive linoleum is offered which is described as nonsparking and highly conductive of static, yet providing adequate protection against accidental grounding from service charges. It is said to meet Ordnance Department specifications for floor and table coverings in explosives operations. (No. 657)

U S I

A new colorimeter of the continuous-flow type is offered, which is said to permit the determination of light transmission of a liquid passing through the instrument. Its application, therefore, is suggested for the continuous control of chemical processes in which the color or turbidity of a liquid must be checked as an indication of concentration or other property. (No. 658)

U S I

Paint brush bristles have been developed from Nylon which are not only said to have the required taper, but also resiliency, toughness, length and inertness to paint ingredients. At present their use is being restricted to military purposes. (No. 659)

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Ansol M
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ACETIC ESTERS

Amyl Acetate
Butyl Acetate
Ethyl Acetate

OXALIC ESTERS

Butyl Oxalate
Ethyl Oxalate

PHTHALIC ESTERS

Amyl Phthalate
Butyl Phthalate
Ethyl Phthalate

OTHER ESTERS

Diatol
Ethyl Carbonate
Ethyl Chloroformate
Ethyl Formate

INTERMEDIATES

Acetoacetanilide
Acetoacet-ortho-aniside
Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

ETHERS

Ethyl Ether
Ethyl Ether Absolute—A.C.S.

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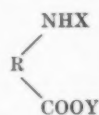
Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine & Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,300,413, Soap, patented November 3, 1942 by Kenneth M. Gaver, Columbus, Ohio, assignor to The Komel Corporation, Dayton, Ohio. A composition of matter comprising a soap containing as saponifier an amylaceous compound in which is combined an alkali metal the hydroxide of which is soluble in ethanol.

No. 2,300,416, Soap, patented November 3, 1942 by Bror J. Grondal, Watertown, and Harry Morley Wyde, Swampscott, Mass., assignors to Lever Brothers Company. A non-irritative soap product containing the soaps of fatty acids having at least 12 carbon atoms and substantially free of the soaps of fatty acids having less than 12 carbon atoms, at least a portion of the soap product consisting of soaps of the fatty material forming the residue of fatty oils of the class consisting of coconut, palm kernel, babassu, tucuum and cohune oils upon removal therefrom of fatty acids having less than 12 carbon atoms, including the fatty acids derived from the glycerides in the oil having fatty acid radicals of less than 12 carbon atoms, the soaps having at least as good lathering properties as those which characterize the soaps of the fatty acids of the fatty oils of the class and being free from the skin irritating properties normally characterizing the soaps of the fatty oils.

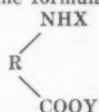
No. 2,300,611, Stabilized Insecticides, patented November 3,

1942 by Ludwig J. Christmann, Bronxville, N. Y., and David W. Jayne, Jr., Old Greenwich, Conn., assignors to American Cyanamid Company, New York, N. Y. A composition of matter containing rotenone together with a compound of the formula



wherein R is an aryl radical, X is a member of the group consisting of alkyl, acyl, aryl and aralkyl radicals and Y is a member of the group consisting of hydrogen, and ester-forming radicals.

No. 2,300,612, Stabilized Pyrethrum, patented November 3, 1942 by Ludwig J. Christmann, Bronxville, N. Y., and David W. Jayne, Jr., Old Greenwich, Conn., assignors to American Cyanamid Company, New York, N. Y. A composition of matter containing pyrethrum together with a compound of the formula



wherein R is an aryl radical, X is a member of the group consisting of alkyl, acyl, aryl and aralkyl radicals and Y is a member of the group consisting of hydrogen, and ester-forming radicals.

No. 2,300,749, Manufacture of Soap, patented November 3, 1942 by Ashton T. Scott, Ardmore, Pa., assignor to The Sharples Corporation, Philadelphia, Pa. In the manufacture of soap, a continuous process comprising thoroughly mixing a fat with a saponifying reagent at a saponifying temperature for a brief period of time, adding a graining agent and passing the resulting soap-containing mixture to a centrifugal rotor and there subjecting the mixture to centrifugation to separate aqueous phase resulting from the mixing and graining operations from the soap-containing mass resulting from the operations, and continuously and separately discharging the soap-containing mass and aqueous phase from the zone of centrifugation, the mixture being vigorously agitated after the addition of the graining agent to effect fine dispersion of the graining agent and maintain the grained soap substan-

tially uniformly distributed in the soap-containing mixture and then promptly passed to the step of centrifugation while the grained soap is still in the condition of substantially uniform distribution.

No. 2,300,750, Manufacture of Soap, patented November 3, 1942 by Ashton T. Scott, Ardmore, Pa., assignor to The Sharples Corporation, Philadelphia, Pa. In the manufacture of soap, the process comprising mixing a source of fat with an aqueous saponifying reagent and with salt in sufficient amount to precipitate from the aqueous phase substantial quantities of soap formed by saponification, continuously passing these admixed materials through a saponifying chamber to saponify the fat in the presence of the salt and thus precipitate soap formed by the saponification reaction, and continuously separating the precipitated soap from the spent reagent phase resulting from the saponification reaction.

No. 2,300,751, Manufacture of Soap, patented November 3, 1942 by Ashton T. Scott, Ardmore, Pa., and Leopold Sender, Baltimore Md., assignors to The Sharples Corporation, Philadelphia, Pa. In the manufacture of soap, a process comprising accomplishing a saponifying stage by mixing a source of fat with a saponifying reagent, subjecting the resulting mixture to saponifying reaction conditions, salting out the soap to produce a soap phase and an aqueous phase, and thereafter subjecting the resulting mixture to centrifugation to separate the soap phase from aqueous phase as the final step of the saponifying stage, thereafter mixing the grained soap and unsaponified fat derived from the saponifying stage with a further quantity of saponifying reagent and subjecting the resulting mixture to a second saponifying stage including the same steps as the first-mentioned saponifying stage, thereafter fitting the grained soap derived from the second-mentioned saponifying stage by mixing the grained soap with water and separating nigre from neat soap by centrifugation, and returning nigre derived from the last-mentioned centrifugation to the first-mentioned saponifying stage in treatment of a further quantity of a source of fat with a further quantity of saponifying reagent in the manufacture of a further quantity of soap.

No. 2,303,159, Insect Repellent, patented November 17, 1942 by Ludwig W. Wasum, Manoa, Pa., assignor, by mesne assignments, to Kessler Chemical Co., Inc., Philadelphia, Pa. An insect repellent comprising cyclohexyl caprate.

No. 2,302,382, Removal of Impurities From Soap Nigre, patented



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November 17, 1942 by Ashton T. Scott, Ardmore, Pa., assignor to The Sharples Corporation, Philadelphia, Pa. In the purification of soap nigre by removal of heavy insoluble impurities therefrom, the steps comprising sedimenting heavy insoluble impurities from the nigre by rotation thereof in a centrifugal rotor, maintaining a stratum of aqueous electrolyte solution adjusted to a concentration which is substantially immiscible with the nigre and of higher specific gravity than the nigre in the portion of the separating chamber of the centrifugal rotor surrounding the rotating nigre, discharging the solids sedimented from the nigre outwardly through the aqueous electrolyte solution, and ejecting the solids circumferentially from the rotor under the influence of centrifugal force.

No. 2,302,384, Parasitocidal Preparation, patented November 17, 1942 by William P. ter Horst, Packanack Lake, N. J., assignor to United States Rubber Company, New York, N. Y. A bactericide, fungicide, and insecticide preparation containing as an active constituent a quinone dioximino compound.

No. 2,302,388, Insecticidal Composition, patented November 17, 1942 by William F. Hester Drexel Hill, Pa., assignor to Rohm & Haas Company, Philadelphia, Pa. An insecticidal composition having as an active ingredient a compound wherein R represents an aliphatic hydrocarbon group of less than 13 carbon atoms, C_nH_{2n} represents an alkylene chain of at least two carbon atoms in which n has a value of two to four inclusive, x represents an integer of at least one, R_1 represents a member of the class consisting of monovalent hydrocarbon groups and divalent aliphatic groups which in conjunction with R_2 and N form a heterocycle, and R_2 represents a member of the class consisting of hydrogen, alkyl and hydroxyalkyl groups and divalent aliphatic groups which in conjunction with R_1 and N form a heterocycle.

No. 2,302,598, Detergent, patented November 17, 1942 by Walter M. Bruner, Wilmington, Del., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. In a process involving the treatment of water, whereby its use for flocculating, deflocculating, foaming, deterging, dyeing and wetting will be more effective, the step which comprises introducing into the water a water-soluble salt of a hydroxynitrilosulfonic acid.

No. 2,303,212, Soap Composition, patented November 24, 1942 by Mearl A. Kise and James F. Vitcha, Syracuse, N. Y., assignors to The Solvay Process Company, New York, N. Y. A soap composition adapted for use in hard water comprising a

water-soluble soap and a salt selected from the group consisting of alkali metal, ammonium, and organic amine salts of an ester of an alpha sulfonic acid derivative of a saturated fatty acid containing 12 to 22 carbon atoms, the esterifying radical of the ester corresponding to the residue remaining after the removal of a hydroxyl group from an alcohol containing not more than three carbon atoms and not more than two hydroxyl groups, the soap and the salt being present in the composition in ratios varying from 98 parts by weight of the soap and 2 parts by weight of the salt to 50 parts by weight of the soap and 50 parts by weight of the salt.

Soap X-ray Studies

X-ray studies of the structure of soap solutions show that in solid sodium oleate the soap molecules are arranged in double layers with the polar or water-soluble groups turned toward one another. The molecules are in an inclined position relative to the layer plane. In an 18.7 per cent solution the interplanar distance equals 78 Angstrom units. Since the length of the molecule is 48.5 A., it must be assumed that the molecules are in an erect position in solution and that the hydrocarbon ends are turned toward one another. In the micelles, oleate layers follow water layers in an alternate fashion and 19.4 water molecules per double molecule are found. In a 6 per cent solution the interplanar distance is increased to 99 A. Both water and oleate layer have the same thickness.

Benzene is soluble in aqueous oleate solution. In a 15 per cent aqueous solution the interplanar distance equals 84 A.; addition of 0.4 gram of benzene per gram of the oleate increases this value to 100 A. A regular sequence results: simple sodium oleate molecule, benzene, simple oleate molecule, water. The hydrocarbon ends are turned toward the benzene, the polar groups toward the water. The benzene enters longitudinally between the oleate layers. In spite of the large amount of included solvent, the order is distinct.

A 42 per cent solution of lauryl pyridinium chloride in water exhibits a good micellar order with an interplanar distance of 38.1 A. Polyethylene oxide in an 80 per cent aqueous

solution (20 ethylene oxide groups) gives a distance of 59 A., whereas the solid polymer gives an interference ring of 80.3 A. In this case an interpretation of the micellar structure is not possible as yet. It can be concluded from X-ray data that the micelles have a foil-like shape and are oriented by a flow gradient. H. Kiesel. *Kolloid-Z* 96, 252-5 (1941).

Glycerine by Periodic Acid

Glycerine can be determined after oxidation by periodic acid, by an acidimetric procedure. This procedure has been successfully applied to C.P.-grade glycerine, spent soap lyes, soap lye crudes, half crudes, saponification crudes, evaporator salt, and mixtures of glycerine with trimethylene glycol and polyglycerols. Factors that influence the determination, such as size of sample, presence of salt and the presence of organic compounds containing hydroxyl groups, have been discussed. Purdy Bradford, W. D. Pohle, J. K. Gunther, V. C. Mehlenbacher. *Oil & Soap* 19, 189-93 (1942).

Detergents on Influenza Virus

A number of detergents were studied as to their ability to inactivate influenza virus, types A and B. Zaphiran (alkyl dimethyl benzyl ammonium chloride) failed to inactivate the test virus after 1 hour's exposure to a concentration of 1:10,000. Tergitol Penetrant No. 7 in a concentration as high as 1:2000 did not destroy viruses in dense lung suspensions. With dilute virus preparations there was measurable inactivation after 1 hour. A 1 per cent solution of Oakite No. 63 (alkaline trisodium phosphate) was inactive against type A virus, but the activity of type B was reduced. A 1 per cent solution of Ivory soap rendered dense lung suspensions of type B virus noninfectious in 40 minutes but only partially destroyed type A. Dilute viruses of both types were destroyed by 1 per cent or by 0.1 per cent of Ivory soap in 15 minutes. Albert P. Krueger. *U. S. Navy Med. Bull.* 40, 622-31 (1942); through *Chem. Abs.*



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917—New Heavy Duty Mixers

Mixing Equipment Co., Rochester, N. Y., has just added to its regular line three new heavy duty air driven mixers. Two of them are gear reduction models; the third is a larger, direct drive model. The following features are claimed for the new mixers: air driven motors used cannot be overloaded or burned out; motors won't stall even when mixing heavy liquids; the air exhaust from the motor is so arranged that it keeps the motor running cool at all times. Models of 1 h.p. and one-third h.p. are available. They are equipped with gear reduction drive and adjustable shaft length.

918—Hercules Rosin Soap Tests

The use of rosin in soap manufacture, especially in spray-dried or powdered soaps, is discussed in a technical booklet just issued by Hercules Powder Co., Wilmington, on the basis of continuing research begun three years ago in Hercules laboratories. The data indicate that when the right choice of rosin is used as a part of the soap stock, and in proper proportion to other soap stocks (in the range of three to 30 per cent rosin), certain definite advantages are gained while no worthy soap qualities are lost. Spray-dried soap can be made with 15 to 20 per cent rosin content.

The results obtained so far in Hercules research show rosin to give: quick and lasting suds, improved solubility and reduced dusting of spray-dried and flaked soaps. Detergency, according to the booklet, can also be improved by proper use of rosin. Spray-dried and flaked soaps containing

rosin have no unsatisfactory aging or odor characteristics. Discoloration on aging in bar soap is in proportion to the grade and amount of rosin added, the data show.

Both gum and wood rosins were used in the tests. All detergency and sudsing experiments were conducted using water of two different degrees of hardness. The soap against which all detergent tests were measured was a straight neutral sodium soap made from prime white tallow. Soap stocks used in intermixtures with rosins consisted, in most cases, of a white stock and a brown stock. Copies of the booklet are available.

919—Reviews Barrel Linings

With the wooden barrel playing an ever-increasingly important role in the replacement of metal containers, the need for protective linings to prevent absorption of contents and leakage is brought up. This whole subject is covered in the January issue of *Silicate P's & Q's*, house paper of Philadelphia Quartz Co. The article reviews the popular method of testing and lining cooperage with silicate of soda. Copies are available by writing the company.

920—Sweeping Compound Booklet

Frank Miller & Sons, 224 W. 58th Street, Chicago, have issued a new booklet on "Sweeping Compounds," which emphasizes the importance of selecting the right type of sweeping compound for the type of floor involved.

921—Spray Machinery Folder

Mississippi Agricultural Experiment Station, State College, Miss., has issued an 18-page circular under the title "Spray Machinery for Home Orchards, Gardens and Truck Crops," in which the author, T. E. Ashley, describes various commercial types of

hand and power-operated sprayers and gives directions for construction and operation of home made spraying devices.

Fine Soapers As Trust

Colgate-Palmolive-Peet, Jersey City, N. J., and its president, E. H. Little of Orange, N. J.; Procter & Gamble Co., and its president, Richard R. Deupree, both of Cincinnati, O.; and Lever Brothers Co., Cambridge, Mass., and its president, Francis A. Countway, of Brookline, Mass., have recently been fined a total of \$60,000 by Judge Guy L. Fake, in the Federal District Court, Newark, N. J., for fixing prices in violation of the Sherman Anti-Trust Act.

The defendants, both corporate and individual, were each ordered to pay the maximum fine of \$5,000 on each of the two count informations. Thorn Lord, Assistant United States Attorney, filed the criminal information, and Manuel M. Gorman, special attorney of the Department of Justice, alleged that some time prior to January 1, 1936, the defendants had entered a conspiracy "to fix, maintain and stabilize prices," in the manufacture, sale and distribution of soap and soap products in the United States and Hawaii.

The defendants, it was charged, fixed prices, and discriminated against certain customers in the granting or refusing of allowances for delivery and distribution of their products, and eliminated certain of their products from defined fields of competition.

The companies entered no defense plea.

Jersey Fat Salvage Up

An increase of 60 per cent in the amount of waste fats salvage in November over October was recorded in New Jersey, a recent report of the state salvage officials states. Housewives in New Jersey contributed 165,000 pounds of household grease in November. This was more than half as much as was collected in the first four months of the drive. In issuing the report, the salvage officials again stressed the urgency of collecting household fats.

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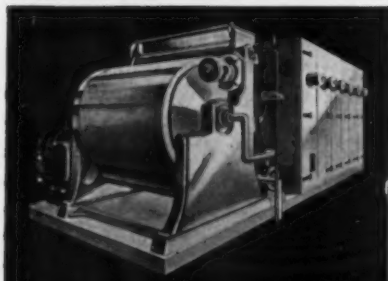
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Castor Oil

(From Page 27)

lands,—not on our own, the prospects for any sizable amount of shipping space being allocated to carry castor beans in quantities larger than the bare minimum essential for our war machine, is negligible. Water shipments of any further quantities beyond this are out. But there are two alternatives,—a domestic crop, and a crop in nearby countries. To this end, the Commodity Credit Corporation is now offering 18-month contracts at a specified price to farmers and agents, at home and in adjacent countries. The contracts are offered at a firm, fair price as an inducement to farmers to increase their crops. The Bureau of Economic Warfare is also considering sources of supply in Central America where rail transportation is afforded, and in Caribbean islands where water transportation is readily available to American rail heads.

Of course the most satisfactory solution from the point of view of our long term economy would be to have a domestic crop as an alternate to cotton, in percentages large enough to insure a safe supply without infringing on the natural castor bean growing countries of Brazil and India. Only negligible quantities of castor beans are being grown in this country at present. Our farmers should have many thousands of acres under cultivation. The need for this domestic crop will carry over into civilian requirements after the war is over. The farmers need a new crop like the castor bean and industry needs the castor bean. It has been our contention for many years that the farmers should not only grow wheat and corn and cotton and other regular staple crops, but should also grow crops directly for use by industry. There is no question about the castor bean being such a crop.

The fact that there would be a shortage of castor oil eventually was easily foreseeable long ago. It was known that large quantities of the oil would be required to make dehydrated castor oil to take the place of tung oil. It was also known that other industrial uses of castor oil were steadily increas-

ing. When we actually did get into the war, all of these previous increases in the use of castor oil had to be further increased and to a large extent.

Castor beans when pressed yield approximately 42 to 45 per cent of oil, which consists partly of cold pressed No. 1 oil and the balance of extracted No. 3 which is higher in acid number and darker in color than the No. 1. And the residue is pomace constituting approximately 55 per cent. This pomace is a valuable fertilizer, so much so that before the war we were importing into this country approximately two hundred million pounds a year in addition to that which we produced in domestic pressing of castor beans. We found also that in the leaves and stalks there were certain ingredients that had high insecticidal value. We learned how to extract those ingredients and there is now being marketed a plant insecticide which has been used with much success. In addition we found that the castor plant could produce certain bast fibre which apparently was immune to insect pests, and it could also produce large quantities of alpha cellulose. We have done nothing in the way of developing these bast fibres or the alpha cellulose, but there might be a considerable place in industry for this cellulose, particularly when you consider that in making wood pulp from slash pine it is necessary to remove about 26 per cent of resins and only about 2 per cent in the case of the castor plant. Thus, from several points of view, a domestic castor crop would profit the American farmer and civilian industry.

At a meeting in Washington early in 1941, these matters were brought out and the Agricultural Department representatives stated that they would take under consideration the matter of having the Agricultural Department foster the domestic growing of castor beans. Under their supervision, plantings of the beans were made in southern Texas in 1941, out of which they hoped to obtain sufficient seed beans to plant rather extensive acreages of castor beans in the year 1942 and thus give the country ample supplies of castor oil. Unfortunately,

their plantings were rather late and they did not turn out as successfully as hoped.

On the other hand, enough seed beans were produced so that in the spring of 1942 considerably larger plantings were made and we have been informed by P. H. Groggins, Chief of the Chemicals Division of the Office for Agricultural War Relations that the 1942 plantings were about 4,850 acres. From this acreage, it is estimated that there will be a seed yield of 11 bushels or 550 pounds per acre or a total of approximately 2,400,000 pounds of beans. The Department has taken a more conservative view of this yield, however, and estimates that there will be about two million pounds of seed beans.

About five pounds of beans will be required to plant each acre of next year's crop so that an apparent acreage of 400,000 will be possible from the two million pounds of beans, but again the government has made a conservative estimate and reduces the probable number of acres to be planted in 1943 to about 125,000 acres. From these 125,000 acres, the yield should be about 69 million pounds of castor beans, which with an oil content of about 20 pounds per bushel should yield about 30,000,000 pounds of castor oil for the year 1943. Industrial users of castor oil will be delighted if such results can be obtained and we sincerely hope that they can. In fact, we hope the Agricultural Department has been too conservative and that the yield will be considerably greater.

Some types of castor plants do not grow to great height and do not produce thick stalks and therefore offer a minimum amount of alpha-cellulose. But on the other hand they are very good bean producers. Other types of plants produce more and better leaves for the manufacture of insecticide. Still other plants grow to great height, have very thick and solid stalks and produce the maximum amount of cellulose. It is foreseeable that when farmers grow castor beans for industrial use, they may find it advisable to plant different types of beans to serve different industrial needs.

OUR company has raised hundreds of acres for its own commercial use during the past six years and on the basis of our research we have determined that castor beans can be grown on any soil that is suitable for corn or small grains. The more fertile the soil, the better the results. The plant is deep-rooted, and once established will take care of itself under most conditions, though the soil must be well drained.

The castor bean is a warm climate plant. From our observations the plants have done well in the cooler sections of Florida, but they are annual plants. In the warm sections, where there is very little frost, they are a perennial plant and bear seeds for many years. The land is prepared in the same manner as for any field crop, though of course, the better the land is prepared, the better the results. We plant all our fields with a Cole corn planter, using a velvet bean plate, planting seed about 30 inches in the row and in six-foot rows. Seeds are planted in March and April, although we have planted as late as June and had very good success in both bean and leaf yields.

Cultivation consists of keeping the young plant free from weeds and the soil loose and mellow until it is well established. Two or three cultivations a season under most conditions are necessary. We have found that under the conditions in Florida, it pays to use some form of fertilizer when the plants are young. Our best results to date have been with a good application of poultry manure when the plants are about four inches high and then another application about six weeks later. Our costs to bring the plants into bearing range from about \$8.00 to \$10.00 per acre, including the fertilizer.

Under Florida conditions and in all parts of the state from north to south, we have used 15 common varieties placing our efforts on three main types of castor beans and keeping the object in mind at all times of leaf yield, as well as bean production. For our use, we have found *Ricinus Communis Africanus* the best variety. This is a large, solid black bean with large

green leaves. It is a fair bean yielder, a fast vigorous growing plant and under normal conditions yields 600-900 pounds of beans per acre. *Ricinus Communis Zanzibarensis* is also a very good leaf-producing variety, but is a slow growing plant until well established. It has large white beans with brown markings. Bean yield is approximately the same as *Ricinus Africanus*. In Cuba, this one is a very heavy bean producer, but puts out very few leaves. For bean yields, but very poor leaf producers, the red types of plants have proven the best. They are known as the Conner type. Yields have varied due to the fungus disease known as the gray mold, which at this time, is the main draw-back in the production of beans in this state and the Gulf Coast area. Farther north, they do not have this disease. Our oil content has varied with the variety of bean grown, anywhere from 42 per cent to 54 per cent oil. Gray mold is the main disease that attacks the seed stalk when the beans are developing, and it can completely wipe out the whole cluster of beans. A hundred acres of the Conner variety have been completely ruined in less than ten days when rains and high humidity were prevalent.

In conclusion, it can be pointed out again that castor oil holds tremendous future possibilities as both a farm crop and an industrial raw material. Its consumption which had already begun to expand rapidly even before it received such a sharp impetus from our war needs, will undoubtedly continue to expand after the war is over. Its new industrial uses represent another stride forward in the notable advances in fat chemistry of the past decade.

During the few years immediately preceding the war, there had been a quiet but considerable increase in castor oil use by certain soap manufacturers. It had been found in some soap specialties, shampoos and toilet soaps to modify the effects of coconut oil so as to reduce its harsh effects on the skin without interfering noticeably with lathering and detergent properties. But further supplies for use in soap products are unlikely until the war is over. Soapers must, of necessity, turn

to such replacements as are available in the field of fatty acids to duplicate as nearly as possible the effects of castor oil in soaps.

Fungicide Test Method

In a new test for fungicidal activity, a 500 cc. Erlenmeyer flask containing 100 cc. of a liquid medium such as 1 per cent peptone water, and 30-40 pieces of ordinary cotton or wool string, is autoclaved for 20 minutes at 121° C. The string used is suitably 1.5-2 cm. long and about 0.75 mm. thick. After the medium has cooled, it is inoculated with *Trichophyton gypsum* and kept at room temperature. The fungus grows in the peptone water and at the same time infects the strings. The infected strings can be used at different times after the inoculation in order to get the fungus in a more or less mature state.

The fungicidal test is as follows: Some infected strings are transferred to the fungicide solution and others to the menstruum only, in which no fungicide is dissolved, as a control. After a suitable lapse of time one string each is removed from the germicide and the control, rinsed with sterile water, and placed on the surface of a suitable medium such as corn-meal agar. The results are read after 2, 4, 7 and 14 days at room temperature.

Other "fungus carriers" such as small pieces of filter paper, may also be used. The most satisfactory results were obtained with strings that had been in contact with the growing fungus from 2 to 5 weeks. Bensusloid (colloidal bentonite-sulfur) is a more effective fungicide than other non-colloidal sulfur preparations when tested against *T. gypsum*. However, its fungicidal action is not absolutely certain. Fritz J. von Gurfeld and Frederick J. Shaw. *Virginia Med. Monthly* 68, 592-4; through Chem. Abs.

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The Egyptian Bar Supply Co., janitor and sanitary supply house, at 2721 Salena St., St. Louis, Mo., is now located at 4715 Pennsylvania Avenue.

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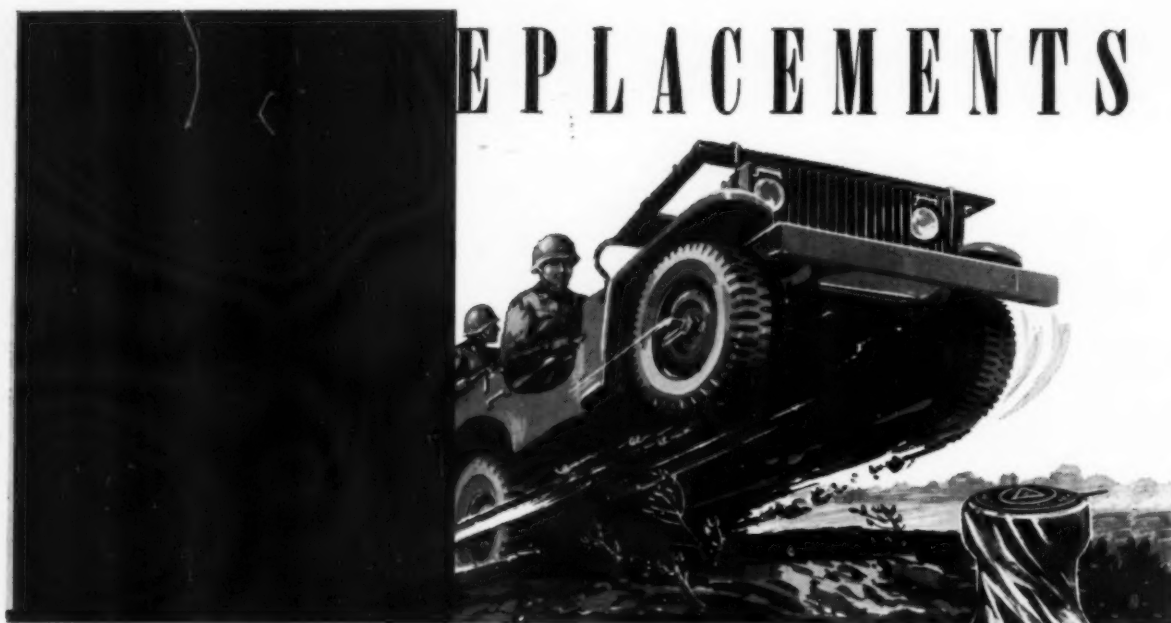
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INSIDE NEWS

JANUARY

PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y.

1943

Two New Methods for Processing Fish

Save Time, Labor and Yield Superior Canned Product



Two methods of processing fish before canning, which have many advantages over present methods of production, have been developed through experimental work undertaken by the Fisheries Research Board of Canada through its Pacific Coast stations. One of the new methods involves smoking, the other steaming.

The product prepared by smoking had a better appearance than the usual raw pack, each fish being entirely separate and firm enough to be lifted out of the can in its entirety. In the smoking procedure, fresh herring were scaled, dressed and washed, then they were brined in saturated brine for 15 minutes. After being spread on 1/2-inch mesh wire trays, the fish were placed in a smokehouse previously heated to 150 degrees F. and were smoked for 30 minutes, using wood shavings and sawdust. After smoking, the fish was sufficiently dried so that it could be handled and packed in cans with ease. The next step was to pack the product in 1-lb. oval or tall cans with about

2 ounces of tomato puree added to each can. The cans were then steamed for 12 minutes with the lids merely resting on top of the cans and then the containers were closed and the product cooked for 90 minutes at 250 degrees F.

The steaming technique preparatory to canning produced a pack with an attractive appearance. The fish were firm and retained their shape even when lifted out of the can, and the flavor and odor were very good. In steam-packing, fresh herring were scaled, dressed and spread on wire screens and steamed from 5 to 10 minutes in a closed retort. The fish were then placed in the smokehouse (which in this case was operated as a drying unit) and dried in a current of warm air for 30 minutes. They were then packed in tin cans and cooked as was done with the smoked pack.

See Progress Report No. 52, Pacific Fisheries Experimental Station, Vancouver, B.C., of the Fisheries Research Board of Canada. (250)

Argentina to Export Yerba Mate to U. S.

South American interests in Argentina have sold to a United States firm 5,000 tons of yerba mate for delivery before the end of 1942. The sale has excited considerable interest in the future export possibilities of this herb. The government of Argentina has issued a decree authorizing the intensification of production of mate. As a result of exhaustive laboratory tests made during the last year in the United States, the mate will be submitted to large-scale processing for the extraction of valuable chemical substances, especially chlorophyll. The present local production of mate is estimated at 72,000 tons annually. (251)

* * * * *

To prevent scurvy from Vitamin C deficiency in war areas, over 500,000 gallons of concentrated fruit juice will be shipped abroad in individual containers. When concentrated the syrup holds 85% of the original vitamin content.

AMA Orders First Dehydrated Pork for Overseas Shipment

The U. S. Department of Agriculture reveals that the Agricultural Marketing Administration has awarded its first contract for dehydrated pork for shipment overseas. The AMA buys all food for Lend-Lease shipment. The new product, which never has been on the commercial market, is made of pre-cooked, fresh, extremely lean pork. Granular in shape, its color and texture are similar to brown sugar.

Dehydrated pork has about one-third the volume of the original boneless meat and weighs about one-fourth as much. Large-scale drying and dehydration of other farm products for Lend-Lease shipment—such as dairy products, vegetables, fruits and eggs—already has saved thousands of tons of shipping space in getting urgently needed food products to the allied nations.

Although in the experimental stage when the war began, meat dehydration has made rapid strides under the impetus of wartime needs for concentrated foods. Large scale production has been encouraged by government orders and it is expected that by early next year at least 10 processors, mainly in the mid-west, will be producing the concentrated pork. It is now being substituted for beef, as there is a greater supply of pork generally available. (252)

* * * * *

Glue factories are having a race to keep up with the increased demand caused by substituting wood for metal and restricting the manufacture of nails.

* * * * *

Venezuela can supply upward of a million pounds of silk cocoons a year. Mulberry trees, diet of silk worms, flourish there.

NATIONAL CAN



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New Process Yields Alcohol From Wastes

Smokeless powder and synthetic rubber can be made cheaply and abundantly using alcohol from watery wastes now poured down the sewer. Waste liquors from paper mills and other industrial plants, as well as sawdust, straw, cornstalks and other agricultural wastes, contain sugars capable of being fermented into alcohol. But the solutions are so thin and watery that the fuel needed for distillation is worth more than the alcohol that could be obtained.

Key to the riddle is fusel oil. Fusel oil dissolves alcohol but will not mix with water. So it is put to work getting the alcohol out of the watery wastes. Subsequently a chemical divorce between the alcohol and the fusel oil is arranged. A similar use of fusel oil can be made in getting acetone and other valuable industrial solvents out of solutions until now considered too thin to be profitably worked. (253)

New Toxic Agent For Insect Sprays

Thanite, a remarkable new toxic agent for insect sprays, is relieving the insecticide manufacturer from dependence upon foreign sources of supply. The usual imported toxic ingredients—pyrethrum, derris, cube and others—are becoming almost impossible to obtain. Insecticides are helping to win the war by enabling the farmer to get better production. They are also instrumental in the control of disease. Thanite is being produced from domestic raw materials available in quantity. In the past season it was just getting into production. Next year it will be used extensively. Chemically it is known as secondary terpene-alcohol thiocyanate and is a stable compound. (254)

Free Room and Board For War Workers

As part of its wartime speed-up program, a large canning company in New Jersey has made special arrangements for the lodging, feeding and transportation of the extra workers employed. Free lunches for all workers are served in the company cafeterias and other meals are sold at minimum prices in the camp mess hall. Some of the workers get free lodging in a former CCC camp six miles from the plant, with free transportation between the camp and the plant. (255)

Barrels are being constructed of plywood in Germany, according to reports reaching the Department of Commerce. The walls of the barrel are wound in puttee fashion in three overlapping layers and opposite directions over a metal core, after which strips of veneer treated with synthetic resin are applied.

Technical Topics

CELLULOSE—Several species of native and imported bamboo grow along the Gulf coast of Texas and Louisiana. No plant can produce as much cellulose per acre as certain species of bamboo. (256)

FUELS—A truck, fitted with a gas producer originally designed for anthracite, has been running on sawdust in Great Britain. Diesel trucks in tests have shown good performance using vegetable oils grown in West Africa—peanut, cottonseed and palm oil. (257)

PECAN SHELLS, long of no industrial value, are being used in the production of activated charcoal as a filler for gas masks. Many thousands of pounds will be processed in a 95,000 square foot factory reconditioned for this work. (258)

FISH LIVER OILS—Uruguay's fish industry reports several fish with liver oil far greater in vitamin A content than cod, required by international standards to have at least 800 units of vitamin A per gram. Among these are hake, averaging 18,000 units per gram, corvina, 26,000 units per gram, bagre from 90,000 to 100,000 units per gram. (259)

BITUMEN EMULSIONS, in which soap acts as an emulsifying agent, are being employed in Britain in blacking-out conspicuous surfaces, such as roadways. The dilute bitumen emulsion is applied to the roadway and then dusted with coal. A cheap and durable blackening effect is said to result. (260)

ALGIN is being investigated in Eire in connection with the making of waterproofing agents and plastic materials. Tests have also proved it to be a satisfactory substitute for sago flour in the sizing of twine. Its possibilities as a starch substitute are being studied. (261)

ROSIN usually free from impurities and clean and bright in appearance is claimed to be easily produced by a process described in a recent U. S. patent assigned to the Secretary of Agriculture. Basis of the process is the drying of the crude oleoresin by the addition of turpentine near the end of the normal distillation period, so that the whole mass may be readily filtered through various clarifying media, including paper. (262)

SODIUM METASILICATE and an alkyl sulphamate are combined in a new preparation suggested for cleaning bright steel surfaces difficult to clean. The sulphamate reduces the surface tension and assists the metasilicate solution in removing the grease film after two seconds contact. (263)

WAX BLEND—Carnauba wax may be substituted with a blend of beeswax, shellac wax, and sal dammar, it is suggested by an Indian Forest Research Institute. The compound is a blend of eighty-five parts of shellac wax, ten parts of beeswax, and five parts of finely ground sal dammar. (264)

SULPHURIC ACID has been found effective in increasing the gum flow of pine trees employed for naval stores production. Tests on slash pine showed an average increase of 25 percent in the gum flow when a 40 percent solution of sulphuric acid was applied directly to fresh streaks immediately after chipping. More than 100 possible stimulants were investigated in the tests, but sulphuric acid gave the best results. (265)

INVISIBLE INSECTICIDE—A new invisible insecticide paint is being marketed for use on windows and door screens in army cantonments, and for the hotel and restaurant trade. (266)

ACID DETERGENTS are opening a new era in food sanitation. The major objections to the use of acid detergents in the past have been their inherent corrosiveness, poor penetrating and peptizing properties, and general lack of other cleaning characteristics. These drawbacks have now been largely overcome. (267)

CITRONELLA — Geraniol and citronellal separation from citronella oil by an improved method is claimed in a recent British patent. The procedure comprises mixing the essential oil with reactive amine and thus causing the reactive aldehyde to form a condensation product of relatively high boiling point. The volatile noncarbonyl compound is then separated by distillation. (268)

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquirers to the original source of the article. Write to National Can Corp., 110 E. 42nd Street, New York City. Please mention the number at end of article—also name of the magazine you saw it in.

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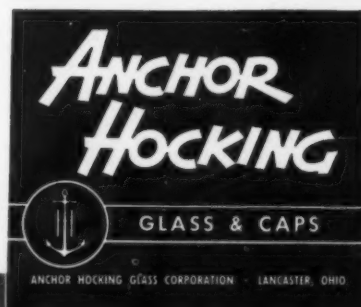
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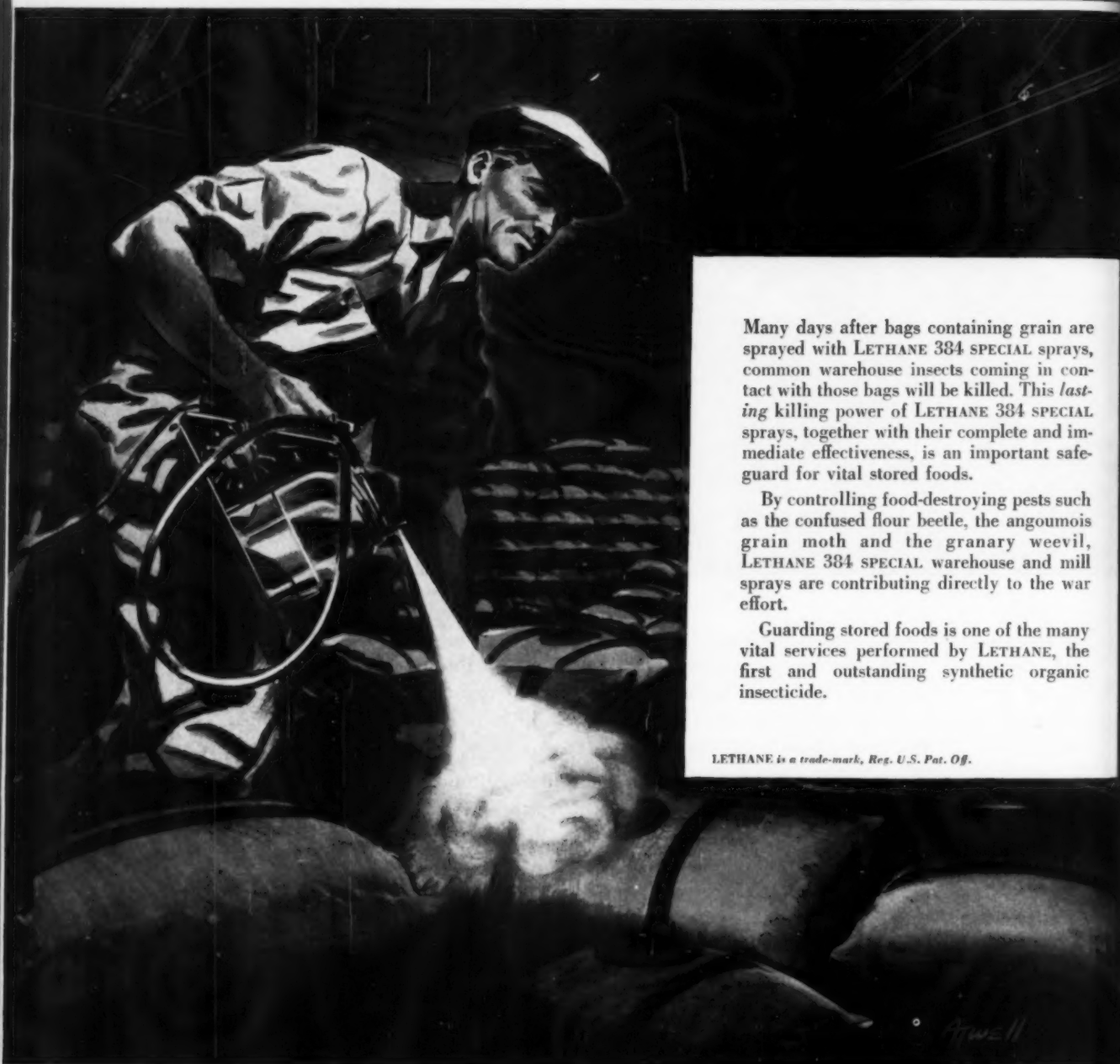
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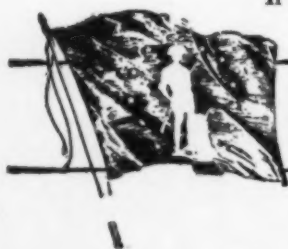
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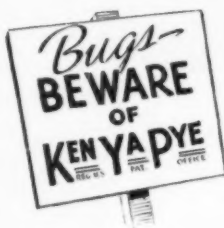
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KENYA, East Africa, can produce a supply of the finest pyrethrum, normally adequate for all requirements. Thousands of tons of the 1942 crop arrived in America last year. Heavy shipments now are afloat direct from Kenya, and fresh from the almost year long crop of the colony's highlands. This supply will not be sufficient however to meet the increasing needs for agricultural and household insecticides. This is due to the enormous and unexpected demands of the armed forces which must be supplied first.

All-out effort is being made in Kenya to produce and deliver an increasing quantity of pyrethrum flowers so as to supply America's needs fully.

Kenya farmers are pleased that their product has found such wide usefulness and point to the huge demand for it as convincing proof of the efficiency of Kenya pyrethrum.

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SYNTHETIC PHENOL GERMICIDES

America's newest and most efficient
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- ★ FOR DESTROYING DISEASE GERMS
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Who as the world's largest manufacturer of commercial disinfectants, take pride in offering a complete line of synthetic phenol germicides for packaging under private brand. Phenol coefficient values from 5 to 15 inclusive, in choice of several odors and in either emulsifiable or soluble type.

SANITARY PRODUCTS

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

OPINION appears quite general in the household insecticide industry that not only is a specification for a fly spray base oil not needed, but that such a specification might discriminate unfairly against products of merit. The contention appears well founded that insecticides of superior quality which did not meet specifications for a base oil might because of this fact alone be classified as inferior by the uninformed. It has also been pointed out that the natural variations in different base oils, due to origin, refining, or something else, do not mean necessarily that one type is better than another. Such variations and differences of opinion, however, do make it difficult to confine the characteristics of all good base oils within one specification. Personal opposition to the idea as unnecessary and of no practical value was expressed at the time of reporting by the chairman of the N.A.I.D.M. committee which investigated the subject. In the light of this strong opposition and potential defects which would be difficult to avoid, abandonment of the idea by the National Association at this time might be well advised.



REPORTS that the importation of pyrethrum and rotenone-bearing roots would be taken over by the Commodity Credit Corporation or some other U. S. Government agency and out of the hands of individual importers have been heard for the past two or three months in Wash-

ington. The source of these reports believes, however, following a recent meeting there, that this transfer of pyrethrum and rotenone authority is probable but not likely to happen immediately. If the change were made, would the power of allocating supplies likewise be taken out of the hands of W.P.B.? After W.P.B. has worked for a year to organize the allocation of these materials, will we have to go through all the harrowing details again with another government agency?



KNOWING that rumors coming out of Washington today are as thick as fleas on a dog and worth about a dime per dozen, we hesitate even to mention some of those which reach our ears. There is so much hush-hush stuff being passed around in that fair city that it is frequently very difficult to separate the chaff from the wheat. Now, we have heard that in addition to taking pyrethrum and rotenone jurisdiction away from W.P.B., all insecticides will be switched to the Department of Agriculture. The theory is apparently that the main function of insecticides is to protect foods against bugs and as the D. of A. handles foods, insecticides should likewise come under its jurisdiction. This is something along the line of reasoning which may put the soap and glycerine section of W.P.B. into the Department of Agriculture also, — the idea being that soap's main raw materials, oils and fats, are principally foods. Next?

N.A.I.D.M. STUDIES '43 OUTLOOK

INSECTICIDE raw materials and containers were in the spotlight as members of the National Association of Insecticide & Disinfectant Manufacturers met at the Hotel Roosevelt, December 7 and 8, for the 29th annual meeting of the organization. The outlook for continued supplies during 1943 of pyrethrum, rotenone and synthetic insecticides, as well as cans, bottles, closures, substitute containers, etc., was reviewed in considerable detail both by industry suppliers and by representatives of the War Production Board, with symposiums on these two important subjects highlighting two of the four meeting sessions.

The association re-elected John N. Curlett of McCormick & Co., as president for a second term, and also returned to office Henry A. Nelson of Chemical Supply Co. as first vice-president and Gordon M. Baird of Baird & McGuire, Inc., as second vice-president. John Powell of John Powell & Co. was re-elected treasurer and H. W. Hamilton of the White Tar Division of Koppers Co., secretary. New members of the board of directors are N. J. Gothard of Sinclair Refining Co., Melvin Fuld of Fuld Bros., and Friar Thompson of Hercules Powder Co., elected to three year terms; Charles W. Furst of Furst-McNess, two year term; and John Marcuse, West Disinfecting Co., one year term.

One of the principal developments at the meeting was an affirmative vote on the proposal to adopt tentative specifications for floor waxes following submission of the specifications by a committee headed by R. B. Trusler of Davies-Young Soap Co. The specifications were published in the December issue of *Soap and Sanitary Chemicals*. The other important development at the meeting was negative in character, the consensus of the

meeting being that it would be unwise to adopt any association specification on base oils for insecticides. Considerable discussion of this topic followed submission of a report by N. J. Gothard of Sinclair Refining Co., who had been named chairman of a committee to investigate the subject and to report on the feasibility of drafting such a base oil specification for unofficial distribution by the association office to interested parties. It was the decision of the group that it would not be in the best interests of manufacturers of insecticides or base oils to distribute even an unofficial specification.

As the meeting closed, announcement was made that the 1943 mid-year meeting will be held in Toronto, June 7 and 8.

Attendance at the 29th annual meeting was well up to the level of previous years, with raw material and container shortages stimulating interest among manufacturers and impressing upon them the importance of keeping abreast of the latest developments along the supply line. The group began to gather at the Roosevelt on Sunday, December 6, and the meeting got into full swing that evening with a session of the board of governors to preview the convention program. The first morning session was occupied largely with reports of officers. Other features of the Monday morning session included a question-and-answer session on tin package replacements conducted by Hugh H. Crawford, consultant, glass containers and closures section, container division of WPB, and an inspirational talk on "Business at War," by Frank W. Lovejoy, Socony-Vacuum Oil Co. Mr. Lovejoy warned his listeners that "any business that neglects to keep its products and name before the public during wartime, even if it has nothing to sell, would be giving the

public a chance to forget it in the post-war era."

The Monday afternoon program featured a symposium on insecticide raw materials, participated in by the following: Harold Noble of S. B. Penick & Co., who discussed the outlook for pyrethrum; R. B. Stoddard, Dodge & Olcott Co., discussing rotenone; and D. F. Murphy of Rohm & Haas, Friar Thompson of Hercules Powder, Alfred Weed of John Powell, and A. R. Jameson of Velsicol, who discussed the synthetic insecticides manufactured by these companies, which in the present emergency represent particularly valuable additions to the supply of insecticidal raw materials. Melvin Goldberg, WPB specialist on insecticides, also contributed to the symposium.

On pyrethrum and rotenone, the outlook was said to depend largely upon two factors,—our ability to increase shipments from producing areas, and the at present unpredictable demands of the armed services for additional quantities of the natural insecticide raw materials. The situation was summarized by Mr. Noble as follows:

"It is said the Kenya growers will produce 11,000,000 to 12,000,000 pounds of flowers in 1943. The production in other areas is being stimulated, and may amount to another 1,000,000 pounds of quality equal to the Kenya high grade.

"It is difficult to estimate the quantity of pyrethrum flowers the army will require for the 'Aerosol' program. It has been estimated to be in the millions of pounds. Needs are contingent upon where hostilities develop. For the present time we know that they are principally in the tropics. Moreover, all incoming planes are sprayed to prevent invasion of certain types of mosquitoes. Neither can it be stated

at ANNUAL NEW YORK MEETING

Insecticide raw material outlook gloomy, metal containers "out for duration" government speakers report. Association adopts tentative specifications for floor waxes—re-elects John Curlett as president. Melvin Fuld, Friar Thompson, N. J. Gothard, Charles Furst and John Marcuse elected to board of governors.

with any degree of certainty the quantity of pyrethrum to be used for the louse powder program. Here again the term a million pounds is employed. Navy is a limited buyer of pyrethrum, and the United States Public Health Service protects the civilian population in the South and in certain outlying islands under their malarial control program. Lend-lease has legitimate call on available stock, and directives from high places govern this phase of allocation. . . . The best estimate can be placed at about 2,000,000 pounds of pyrethrum flowers to be required for agriculture.

"From the foregoing it becomes clear that the allocation process must proceed on a month-to-month basis. At first, reservations must be made for governmental needs. Then losses at sea must be considered. Happily there have been but two losses of cargoes this year, and the quantities involved were relatively small. WPB allocates whatever quantities remain, considering always the importance of 'end use.' Supplies are spread out a little thin at times, but the effort to be as fair as possible under the emergency is generally recognized."

It was indicated by other speakers that by mid-1943 the situation may be somewhat improved, but that until that time only small supplies of pyrethrum will be available for essential civilian uses. Direct agricultural needs and demand for pyrethrum for protection of stored foods will receive first consideration in the civilian classification, and then if any additional supplies remain, such material will go for additional civilian needs where replacements cannot be used,—for roach control in restaurants, control measures in foodstuff plants, etc.

The situation in rotenone was described as even more critical. Rotenone insecticides will be available, it was predicted, only for bare agricultural needs. The Army has been asked to avoid use of rotenone in its delousing program, it was reported, and early issuance of an amendment to the rotenone control order was predicted, limiting use of rotenone insecticides to but a few crops where other insecticides cannot serve as replacements.

The manufacturers of synthetic insecticides reported that their problems involve principally questions of plant capacity. As rapidly as priorities

can be obtained on equipment and materials, new plant units are being put into operation, they advised, to supplement insufficient supplies of the natural insecticide raw materials.

ANOTHER feature of the Monday afternoon session was a question-and-answer period on metal containers conducted by R. S. Solinsky, chief of the metal can and collapsible tube section of WPB. Mr. Solinsky forecast early issuance of a new draft of M-81 (conservation order covering metal containers, since issued, and taking the place of the previous orders M-81 and M-136). This new order, he reported, would ban use of any metal containers for insecticides, although containers now in stock could be used, he advised, provided they are not in excess of quotas. In response to another question, he advised that government orders can, of course, still be packed in metal cans. Manufacturers who might anticipate rush government orders for products to be packed in metal cans should take advance steps to maintain limited container stocks, he suggested, by filing the proper certificates of intent, enabling them to obtain supplies.

Other papers at this session included a report on a new "Insecticide Testing Method" by Dr. C. W. Kearns, Department of Entomology, University of Illinois, a paper reviewing "New Potential Insecticides" by Dr. R. C. Roark, chief of insecticide investigations, Bureau of Entomology and Plant Quarantine, U. S. Dept. of Agriculture, and a review of the problems of enforcing the Insecticide Act during wartime by Dr. E. L. Griffin of the Insecticide Division, U. S. Dept. of Agriculture. All are reviewed fully elsewhere in this issue.

A technical paper, "Dry Skim Milk as a Food for the Adult Fly," (Turn to Page 94)

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1943

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MELVIN FULD
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was presented by title only by one of the authors, F. W. Fletcher of Dow Chemical Co. He commented that not all types of dry milk were found to be equally satisfactory, and that unfortunately the most satisfactory type is now not freely available because of war demand. This paper will appear in a later issue of *Soap and Sanitary Chemicals*.

THE Tuesday morning session was the one of most interest to manufacturers of disinfectants, with a symposium on disinfectants and sanitary products serving as the opening feature. F. U. Rapp of Hercules Powder Co., outlined the market situation on pine oil, while J. A. Schade of Innis Speiden reviewed the present and future market outlook for waxes. C. S. Harris of Shell Oil Co., spoke on petroleum products. The report of Dr. E. G. Klarmann of Lehn & Fink Products Corp., for the Disinfectant Scientific and Standards Committee was presented by title only, the complete text of the report being published elsewhere in this issue.

The nominating committee, consisting of Russell Young, of Davies-Young Soap Co., Don Clark of Dr. Hess & Clark, A. W. Morrison of Socony-Vacuum Oil Co., J. L. Brenn of Huntington Laboratories and N. J. Gothard of Sinclair Refining Co., reported at the Tuesday morning session, recommending the re-election of former officers of the association.

A container symposium featured the Tuesday morning session, the participants including H. L. Sipple of American Can Co., J. N. Davies of Aridor Co., E. F. Bertrand of Owens-Illinois Glass Co., G. T. Gossett of Wilson & Bennett Mfg. Co., B. H. Greenwood of Thomas W. Dunn Co., Gardiner Lane of St. Regis Paper Co. and N. P. Dana. Container buyers were advised to standardize on a limited number of sizes of bottles, selecting wherever possible the bottles using the smallest size caps. Moulds for new or odd sized glass containers are practically impossible to obtain, it was pointed out. Some added metal may be available at a later date for closures, it was indicated, and work is proceed-

ing on development of substitutes. Use of phenol compounds in molded closures for many products has been restricted, packagers were warned, although limited stocks of such closures will still be available for use in the packaging of insecticides.

A number of interesting new developments in the packaging field in the way of replacements for other materials were shown. Among these was a new flexible lining for paper containers, new developments in the multi-wall paper bag, and a new liner for containers midway in nature between paper and cloth.

Another speaker at the Tuesday morning session was L. J. LaBrie, chief of the chemicals division of the OPA, who conducted a question-and-answer session on OPA pricing policies as they apply to the products of the insecticide and disinfectant industry. Of particular interest was his prediction that dollars and cents prices may very shortly be issued on floor waxes and insecticides. In reply to a question about the 3 per cent tax on freight charges, he advised that this must be absorbed when selling on a delivered basis. Answering a question on free deals, he indicated that these cannot be discontinued in cases where they had been in effect for 121 days prior to the effective date of GMPR. Explaining the OPA attitude toward cases in which manufacturers request price relief under the "undue hardship" clause, he advised that the petitioner must prove overall unprofitability of his lines rather than simply unprofitability of single items under price ceilings.

AMONG the speakers at the closing session of the convention, Tuesday afternoon, was C. F. Hughes, business editor of *The New York Times*. Discussing the outlook for business in a world at war, Mr. Hughes declared that a definite decision is required as to the extent of military and lend-lease needs to determine just how far it is necessary to strip down the civilian economy. Pointing out that such concrete figures may come out of the long-delayed action in appointing a Manpower Commissioner with authority over selective service, Mr. Hughes

added the warning: "France stripped her factories of men when she mobilized and Britain just escaped such disaster in time by realizing what a modern army required on the homefront."

Another featured speaker on the Tuesday afternoon program was John W. Vandercook, NBC news commentator, who told his audience some first hand facts about the New Guinea and Solomons Islands fighting areas in the South Pacific, which figure so prominently in news headlines of the day.

"Disinfestation of Aircraft" was the title of an address by Surgeon Gilbert L. Dunahoo of the U. S. Public Health Service, which concluded the convention program. The airlines operating to South America have been under the imperative necessity of working out 100 per cent effective insect control measures, said the speaker, because of the imposition of severe fines by Brazil on any airline found to have brought a live insect into the country. A pyrethrum insecticide, automatically dispensed from a refillable container of the aerosol bomb type, has been found to be the answer to the airline's problem, he reported. Disinfestation stations have been set up and are now operating, he reported, at numerous intermediate landing fields in the central American area. Surgeon Dunahoo's paper will be reproduced in an early issue of *Soap and Sanitary Chemicals*.

REGISTRATION LIST

Firm and Representative

Agricultural Labs., Inc.—Hector E. Valtz.
Allaire, Woodward Co.—R. P. Neptun.
Allied Chemical & Dye Corp. (The Barrett Div.)—F. H. Johnson, R. C. Quortrup.
American Can Co.—T. E. Alwyn, D. B. Craver, H. L. Sipple.
Ampion Corp.—L. B. Schwarcz.
Aridor Co.—James N. Davies.
Aromatic Products, Inc.—E. T. Booth, M. Lemmermeyer, Edward Paradise, J. H. Stephenson.
Atlantic Refining Co.—H. R. Ballentine, N. A. Collins, J. M. Hoerner, M. H. Reynolds.
Auto Compressor Co.—Gilbert W. Wilkin.
Baird & McGuire—G. M. Baird, Eleanor F. Ganley, A. Martinez, J. C. Varley.
Bayer Semesan Co. (Dupont)—J. Hunter Gooding, Jr.
Bell, S. H. Co.—S. H. Bell.
Borne Scrymser Co.—Edward H. Schmidt.
Boyle, A. S. Co.—G. A. Bowden.

(Turn to Page 121)

NEW POTENTIAL INSECTICIDES

By R. C. Roark*

U. S. DEPARTMENT OF AGRICULTURE

SUBSTITUTES for household insecticides may be grouped in two classes, (1) materials that are complete substitutes for the standard insecticides and (2) materials that can replace the standard insecticides only in part and are designed for use admixed with them.

Very few chemicals are known that are complete substitutes for the standard insecticides. A possible example is sodium fluosilicate (known to the trade as silicofluoride of soda). Toxicologically, sodium fluosilicate is equivalent to sodium fluoride when compared on the basis of equal fluorine content. Inasmuch as sodium fluosilicate contains about one-third more fluorine than does sodium fluoride, three pounds of the former should equal four pounds of the latter. From a practical standpoint, however, differences in the physical properties of the two salts, such as crystal form and particle size, and the presence of different impurities, make difficult the substitution of one for the other. Nevertheless, it does seem possible that sodium fluosilicate, by suitable grinding and possibly by the addition of a conditioner, could be put into a physical condition in which it would dust readily, in which case it would doubtless prove a satisfactory substitute for sodium fluoride. Investigations along this line should be made, because sodium fluosilicate is one of the few chemicals that promise to be more abundant in 1943.

The number of materials that are partial substitutes for the chief household insecticide, pyrethrum, is very great. Pyrethrum flowers contain two insecticidal principles, called pyrethrin I and pyrethrin II. The first is responsible for the kill and the second for the knock-down of houseflies.

Many materials are known that will kill adult houseflies when dissolved in kerosene and applied as a spray, but nothing has yet been found that is equivalent to pyrethrin II in its instantaneous paralyzing action. Hence, pyrethrum extract must still be used to ensure knock-down of flies, although the kill can be accomplished by the use of numerous synthetics, many of which are well known to the insecticide industry under proprietary names. The activity in developing new synthetics for use in household fly sprays has been very great. Bowen and Smith** recently examined the United States patents issued during the period February 1938 to June 1941. From 75 of these patents they obtained a list of about 1,400 organic compounds proposed as substitutes for pyrethrum for use in kerosene fly sprays. In this list 339 thiocyanates and 4 isothiocyanates are included. Few of these synthetics are described as being effective in themselves, but rather they are intended to partially replace pyrethrum and to be used with it.

In considering mixtures of insecticides, the possibility of synergistic action is to be kept in mind. Synergism is defined as "co-operative action of discrete agencies such that the total effect is greater than the sum of the two effects taken independently."

A clear-cut example of synergism is the use of sesame oil with pyrethrum extract. Eagleson^{1,2} in 1940 reported that, of all the fatty oils he tested, only sesame oil enhanced the insecticidal action of pyrethrum extract against houseflies. Haller et al.³ in 1942 reported that sesamin in the sesame oil was responsible for its synergistic action. Sesamin alone caused no knock-down of houseflies in 10 minutes and only 5 per cent mortality in 24 hours, but when it was added to pyrethrins in

refined kerosene (1 mg. pyrethrins and 2.5 mg. sesamin per cubic centimeter) the kill was increased from 20 per cent to 85 per cent. The structure of sesamin is well known, and synthetic compounds of related make-up have been prepared. Asarinin, which is a constituent of the bark of the southern prickly ash, acts similarly to sesamin and is related chemically to it. Iso-sesamin also enhances the killing action of pyrethrins against houseflies, but pinosresinol (a constituent of spruce gum) and its derivatives, dimethyl-pinosresinol and diacetylpinosresinol, do not.⁴ It is concluded from the work done so far that the nature of the substituents on the benzene ring is the only determining factor in the synergistic action of this class of compounds. This finding opens up a large field for future research and indicates that not only natural products but also synthetic products will be found that are markedly synergistic when used with the pyrethrins.

According to the literature, mixtures of rotenone with certain organic thiocyanates display synergistic action against houseflies. The possibilities of finding synergists for use with organic insecticides, both synthetic and of plant origin, seem bright.

The Bureau of Entomology and Plant Quarantine has been developing new synthetic organic insecticides for a number of years. They have been developed for the primary purpose of finding a substitute for lead arsenate. It is likely, however, that many of these horticultural insecticides are also toxic to houseflies and other household insects. The writer believes that the following compounds, which have been proved to be toxic to codling moth larvae, mosquito larvae, the southern armyworm, melon worm,

* Before Natl. Assn. Insecticide & Disinfectant Mfrs., New York, Dec. 7th, 1942.

** Unpublished manuscript.

cabbage looper, cross-striped cabbage worm, imported cabbage worm, and other insects attacking vegetables, are worthy of testing as household insecticides: Phenothiazine, xanthone, phenoxathiin, pentaerythryl bromide, styrene dibromide, paraiodoazobenzene, paraiodonitrobenzene, phenazine, 4, 6-dinitroorthocresol, 2-chlorofluorene, phthalonitrile, 2-furanacrylonitrile, paraiodoacetanilide, paraaminoacetanilide, and 2-furaldehyde semicarbazone. These compounds and additional ones listed by Smith⁶ may be found not only to be toxic to household insects, but also to serve as activators, or synergists, when mixed with pyrethrins in fly sprays. McGovran and Sullivan⁵ recently reported that methylphenylnitrosoamine and 2, 4-diamylcyclohexanol activated the pyrethrins present in highly refined kerosene. It is probable that many other synthetics will have a similar action.

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G. I. Soap

(From Page 29)

his story of how the dishes are washed with G. I. "The method we use," he says, "is ingenious. We get a gallon can and drive holes in the sides and bottom, and cut up G. I. soap in small chunks. The soap is placed in the gallon can and then the can is placed under a faucet of very hot water. The pressure is turned on full force. The resulting soap suds flow to the brim of the sink, and then it doesn't take much energy to wash the greasiest of dishes because this hot soapy water cuts the grease with ease."

Besides dish washing, G. I. soap is used for all manner of cleansing operations. It is used to scrub floors ("it cleans so well that we do not bother trying to get it out of the cracks in the floor because the soap tends to eat the dirt in the spaces between the flooring,"—a soldier tells us); other uses are to clean out web equipment, toilets, shower room, stairways and to scrub the outside of the barracks and benches in the school. G. I. is not used to clean motorized vehicles, although it is described as an all-purpose cleanser.

Unfortunate results in the use of G. I. soap, it is the widely held belief of soap makers, lie not so much with the soap itself as with the user. The importance of the human element in the use of G. I. as with other soaps is not to be minimized, soap men say. For instance, one person will get excellent results with a certain type soap, whereas another user of the same soap, used under approximately the same conditions, will get inferior results. So, too, with G. I. soap. The neat industrious soldier will get good results; the sloppy, careless fellow will get poor results. In the years before the common acceptance and widespread use of the specialized white soaps, common yellow laundry soap was used for an almost unlimited variety of cleaning operations with good results. This evidence should be considered before criticizing yellow soap's counterpart, G. I. too severely.

The possibility of materially improving G. I.'s quality is remote. The principal factor is the cost. G. I. is bought by the Army for between five and six cents a pound. To get a noticeably better soap, it would be necessary to pay possibly twice this or more. An impending shortage of soap raw materials is another factor that puts the brake on the possibility of substantially improving Government Issue soap right now. Finally, there are better soaps available if the Army wants them and is willing to pay the price. But, for the time being, the Army seems willing to string along with G. I. and supply our millions of fighting men with this old standby.

G. I. soap is not the only soap and detergent used in and around Army

posts by a long shot. It is the main soap supplied by the Army free of charge. There is nothing to stop any soldier from buying out of his own pay any of the popular brands of toilet soap for personal use or any other use. In fact, most men buy their own soap for showering and the like. With canteens and post exchanges stocking many popular brands of toilet soap at low cost, only the hardest and most frugal use G. I. soap for bathing in this day and age.

When it comes to washing dishes, pots and pans, scrubbing floors, laundering clothes in the field,—even then G. I. is not the sole soap or detergent. Flake soaps, powders, etc., are often bought from company mess funds, that is where the members of the company do their own dishwashing which is most common. A story from the West Coast says that one Army post has been buying Colgate-Palmolive-Peet's "Vel" for use in dish washing in place of G. I. soap. But this is not much comfort for the man who spends a day or two on K.P., scrubbing greasy pots and pans, or washing dishes from morn until night using solely hot water and G. I. soap. His hands know that something has happened to them before his tour of such duty is finished. "Dish-pan hands" is to put it very mildly indeed. But in justification of the old standby, G. I., it might also be said that even if he used the finest toilet soap under similar conditions and for as long a time, his hands might also be a trifle on the tender side.

Temporary certificates, of approval for fire-fighting equipment made with non-critical substitute materials, are now being issued by Underwriters' Laboratories, Inc., and Factory Mutual Laboratories. These two organizations, which test and approve or reject fire-fighting devices on the basis of merit, issue up to date lists of approved equipment. These lists may then be used as the basis for judging of such equipment. Underwriters' Laboratories, Inc., are located at 207 E. Ohio Street, Chicago; Factory Mutual Laboratories, 184 High Street, Boston. Lists can be obtained direct from these laboratories.

DISINFECTANTS AND ANTISEPTICS

A Summary of Scientific Advances During 1942

By Dr. Emil G. Klarmann*

Lehn & Fink Products Corp.

ALTHOUGH the present survey is intended to cover the scientific and technological developments in the field of anti-bacterial agents and processes reported during the past year, mention will be made of some of the more important papers or patents published in previous years which are only now coming to our attention, due to war time difficulties interfering with the prompt exchange of such information.

Amines and Ammonium Compounds

This comparatively new class of antibacterial agents appears to be receiving increasing attention, judging by the number of papers and patents devoted to it. An important contribution is that of Z. Baker, R. W. Harrison and B. F. Miller¹ who, with the aid of a special technic, studied the bactericidal effect upon four Gram-positive and three Gram-negative micro-organisms of a whole series of cationic detergents of the class of quaternary ammonium compounds, comparing them with a number of anionic detergents, mostly sulfated organic derivatives. As a class, the cationic detergents were found to be very strongly germicidal for the Gram-positive bacteria, less so for the Gram-negative ones. By contrast, the anionic detergents are much less effective, and mostly with respect to the Gram-positive variety.

The papers by J. M. Barnes² and by G. E. Clarke³ deal with the clinical aspects of cetyl pyridinium bromide and chloride respectively, and

emphasize the freedom from irritant action on the skin or wounds.

The first to call attention to the bactericidal properties of quaternary ammonium compounds was G. Domagk; incidentally this is the same Domagk who in collaboration with Mietzsch and Klarer is responsible for the initiation of the "sulfa" drug therapy. Two new and broad German patents are reported to have been granted to him for germicidal compositions. One⁴ covers quaternary ammonium compounds having an aliphatic, non-acylated residue with at least six continuous carbon atoms linked to a ring; this linkage may be direct or via an oxygen, nitrogen or sulfur atom. The other⁵ covers amines and ammonium compounds having an aliphatic hydrocarbon radical of at least nine carbon atoms, attached to the nitrogen.

A patent obtained by J. E. Muskat⁶ endeavors to combine the anti-bacterial effects of hypochlorites with those of the quaternary ammonium derivatives through the agency of such compounds as, e. g., trimethylbenzylammonium hypochlorite, tetramethylammonium hypochlorite and the like. These products, obtained by the halogenation of the respective hydroxides probably have the structural formula $R_1R_2R_3R_4N(OCl)$ where R_1 is a hydrocarbon or a substituted hydrocarbon radical, and R_2, R_3, R_4 are either hydrogen, or hydrocarbon radicals. A corresponding patent on hypochlorites of heterocyclic quaternary ammonium compounds has also been issued to the same author⁷; N-methylpyridinium hypochlorite is an example.

Derivatives of alpha-amino-pyridines substituted on the nuclear nitrogen are covered by a German patent issued to E. Haack and R. F. v. Buddenbrock,⁸ those of 3, 6-diaminoacridinium derivatives by one granted to W. Herrmann and O. Sievers⁹; the latter are said to be particularly effective against gonococci. Trypanocidal action of quaternary 7-amino-9-(4-aminophenyl)-10-alkyl-phenanthridinium salts is claimed in a patent by G. T. Morgan and L. P. Wallis.¹⁰

A series of compounds made by combination of water insoluble organic acids produced by the oxidation of petroleum hydrocarbons, with certain tertiary amines (e. g., tert. butylhydroxybenzyl-diethylamine), are claimed by C. E. Earle¹¹ to be effective in combating skin infections of bacterial or fungal origin.

Phenolic Materials

There have been comparatively fewer developments in this field during the past year.

The effect of temperature upon the bactericidal activity of phenol and of a number of its derivatives is the subject of a study by F. W. Tilley¹² who finds that this effect varies with each phenolic bactericide and with each test organism. Among the phenolic compounds investigated were ortho- and para-cresol, ortho- and para-butylphenol, and resorcinol. Ethyl- and butylalcohol were included in this work.

H. L. Cole, C. C. Prouty and E. R. Meserve¹³ did not encounter any noteworthy germicidal activity among a series of substituted naphthol derivatives. Thus 4-bromo-2-naphthol, 2-

* Before the 29th Annual Meeting, Natl. Assn. of Insecticide & Disinfectant Manufacturers, New York, Dec. 7, 1942.

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butyro-1-naphthol, 4-bromo-2-propionynaphthol, 2-propyl-1-naphthol-ethyl ether and others were practically ineffective against *Es. coli*, *B. subtilis*, *Staph. aureus* and *Eb. typhi*; however, 2-ethyl-1-naphthol killed all bacteria in 30 minutes, and 2-propyl-1-naphthol all but *Es. coli*.

A germicidal concentrate consisting of o-phenylphenol in partially neutralized castor or sperm oil is the subject of a patent granted to L. S. Roehm¹⁴, while combinations of phenols with acid sulfates of aliphatic alcohols, adjusted to pH 2 to 3 were patented by A. L. Rawlins¹⁵; an example of the latter idea is furnished by the combination of di-sec. hexyl-resorcinol and gardinol plus hydrochloric acid. Aqueous dispersions of phenols obtained by means of gel forming clays are described in a British patent assigned to the Dow Chem. Co.¹⁶; in this case the stock concentrate is obtained by mixing the clay with the molten phenol, with formation upon cooling of a cake which is readily comminuted by cracking or grinding.

Phenol derivatives are rendered soluble by means of quaternary ammonium compounds, according to R. Huetter and R. Neu¹⁷; their patent mentions alkylpyridinium chloride or other quaternary ammonium compounds derived from weak cyclic organic bases with at least one aliphatic radical, containing at least six carbon atoms attached to the nitrogen, and employed in a proportion sufficient to produce clear solutions upon dilution with distilled water.

"Sulfa" Compounds

These highly important materials were originally intended for a strictly chemotherapeutic application, i.e., for the treatment of generalized infections largely through parenteral administration. As is known, spectacular successes were achieved, revitalizing the whole field of chemotherapy which until then seemed to remain rather inactive for a number of years. In the recent past, however, the topical application of these compounds is also under extensive study in spite of the fact that when measured by the hitherto accepted standards, their germicidal efficacy appears to be rather low, par-

ticularly when compared with that of the customary older types of antiseptics. The following extracts from a number of papers were chosen with the primary view of supplying information as to the mode of action of this class of antibacterial agents:

H. C. Ballou and A. Guernon¹⁸ find sulfathiazole and sulfamethylthiazole to exert an inhibitory effect on the growth of virulent tubercle bacilli planted in solid media, while sulfanilamide and sulfapyridine are less effective in this respect. No action was observed in liquid media; tests for a bactericidal effect of sulfathiazole gave negative results.

The effects of various sulfonamides upon the growth rate of three pathogenic strains of hemolytic staphylococci were studied by W. Kempner, C. Schlager and P. Summers¹⁹ who employed the manometrically measured oxygen consumption and carbon dioxide formation as their criterion. The order of increasing inhibitory efficacy of the compounds studied is as follows: sulfaguanidine, sodium sulfapyridine, sodium disulfonyl, sulfadiazine, sulfathiazole and sodium sulfathiazole. For pneumococci, sodium sulfapyridine was more effective than sulfadiazine.

M. A. Poston and S. S. Orgain²⁰ investigated the bacteriostatic effects of several "sulfa" compounds upon 25 strains of *Streptococcus viridans*, isolated from the blood of patients. The results yielded not only a great variation in the effects of the drugs with respect to a number of the different strains but also in the susceptibility of the individual strains to the action of the various compounds. Sodium sulfapyridine showed the most marked inhibitory efficacy against the greatest number of strains.

The employment of certain "sulfa" compounds in lower concentrations than required for complete inhibition brings about changes in bacterial morphology according to P. Hadley and F. P. Hadley.²¹ Thus the serial transfer of a type 5 beta-hemolytic streptococcus to peptone broths containing increasing proportions of sulfanilamide causes progressive transformation from the mucoid to the smooth

phase; the latter is more resistant to bacteriostatic action than the former. The mucoid forms which were not transformed retained their original virulence, while the derived smooth phase acquired the avirulence characteristic of this form.

Related phenomena were observed under similar circumstances by R. A. McKinney and R. R. Mellon²² in the case of pneumococci. From mice with experimental pneumococcal peritonitis, and treated with suboptimally effective doses of sulfanilamide these authors isolated a series of intermediate variants, termed modulations, beginning with a slightly modified colony and ending with unencapsulated, avirulent organisms. These modulations form a gradient of diminishing metabolic activity with respect to the ability of formation of hydrogen peroxide and of fermentation of inulin; conversely, there is an increase of susceptibility to phagocytosis. One modulation undergoes spontaneous autolysis which may be the result of enzymic imbalance induced by the metabolic alterations.

The exact *modus operandi* of the "sulfa" compounds, of course, is of the greatest interest. The "anticalase" theory originally advanced appears to be more and more untenable, while Fildes' theory of interference with, or blocking of a vital bacterial enzyme system is now generally accepted. According to M. G. Seavage and M. Shelburne²³ it is primarily the respiratory enzyme system that is affected by the union of sulfanilamide with the enzyme or enzymes.

In the previous reviews reference was made to para-aminobenzoic acid interfering with the inhibitory action of sulfanilamide. H. McIlwain²⁴ reports analogous results with pantoic acid which is in the same relation to pantothenic acid as sulfanilamide is to para-aminobenzoic acid. Pantoic acid inhibits the growth of hemolytic streptococci, pneumococci and diphtheria germs evidently by interfering with their utilization of pantothenic acid which is an essential metabolite.

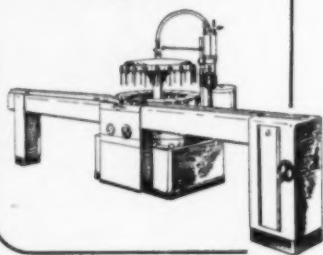
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lococcus and of other micro-organisms in chemically defined media can be inhibited by alpha-aminosulfonic acids and restored by alpha-aminocarboxylic acids which need not correspond in structure to the inhibitor, and that staphylococcus cultures trained to be independent of most alpha-aminocarboxylic acids also develop a resistance to inhibition by alpha-aminosulfonic acids. This is another proof that such inhibition is caused by the blocking of vital enzymes by compounds structurally related to natural substrates.

According to N. S. Dimond²⁵ sulfanilamide is capable of inhibiting the mat growth of *Trichophyton purpureum* on various media, although there is some spore germination. Again para-aminobenzoic acid interferes with this inhibition when employed in concentrations as low as 1:500,000. G. M. Lewis and M. E. Hepper²⁶ find that the several best known "sulfa" drugs do not inhibit the growth of *Monilia albicans*; the growth of *Trichophyton gypsum* is inhibited to some extent by all of them, and completely retarded over the observation period of three weeks by sulfanilamide.

A finding of significance for the increasingly important external application of "sulfa" drugs was made by E. A. Strakosch and V. M. Olsen²⁷ according to whom sodium sulfathiazole is most rapidly effective in bases of the water-in-oil type of emulsions which are rich in cholesterol.

As in other classes of antibacterial agents so also in the case of "sulfa" drugs an enhanced synergistic antibacterial effect is obtained in combination with other antiseptics. Thus E. Neter²⁸ reports that the individual common sulfanilamide drugs combined with azochloramide (N, N'-dichloroazodicarboximidine), exert a greater bacteriostatic effect on *Pneumococcus Type I*, *Streptococcus* (hemol. A and D) and *Staph. aureus hemol.* than either alone in a like concentration.

Bactericidal phosphoric acid derivatives of sulfanilic compounds are embodied in a British patent issued to F. Hoffman-La Roche & Co., A. G.²⁹

Chlorine Disinfectants

H. O. Halvorson, E. J. Ordal and J. L. Wilson³⁰ obtained a patent

covering germicidal and detergent combinations comprising an "active" chlorine compound, e.g., azochloramide with a buffer salt and a wetting agent in specified proportions. A British patent³¹ refers to combinations of calcium hypochlorite, containing upward of 50 per cent of available chlorine, with synthetic organic water-soluble detergents which do not produce a precipitate in the presence of calcium ions, e.g., the higher molecular alkyl sulfates, also quaternary ammonium compounds.

Organo-Mercurials

A patent granted to A. W. Ralston and M. R. McCorkle³² covers mercurated aliphatic ketones, produced by treating unsaturated ketones of 11 or more carbon atoms and one or more double bonds, with a mercuric salt in the presence of water or of an aliphatic alcohol with not more than five carbon atoms. Examples are 9, 26-bis (acetoxymethyl)-10, 27-dimethoxy-18-pentatriacontanone, and 1-chloromercuri-2-butoxy-20-heneicosan-11-one.

The reaction between aqueous mercuric chloride and sodium linoleate yields the antiseptic mercury 9, 12-octadecadienoate, according to a patent by R. A. Stone.³³

The Ostro Research Laboratories received a patent³⁴ for a water-soluble organic mercurial obtained by reacting a diazotized aminoarylsulfonic compound with a hydroxyaryl compound having mercury in the ring.

Antibacterial Aerosols

This field of antibacterial mists, vapors, smokes, etc., has been receiving increasing attention in the recent past, in connection with attempts at the sterilization or disinfection of the atmosphere.

The vapors of some 128 solid substances were tested for their antibacterial action upon *Staph. aureus* and *Es. coli*, by J. Lebduška and J. Pidra.³⁵ Using a simple technic the authors found that trichlorophenol, iodine, iodine trichloride and, peculiarly, ammonium carbonate, prevented bacterial growth, while paraformaldehyde, orthocresol, chloral hydrate, chlorethone, phenol, para-benzoquinone, hydroxyquinoline, calcium hypochlorite, thy-

mol and carvacrol permitted only slight growth. 1, 3, 5-Xylenol and para-cresol showed only slight action, guaiacol, chloramine, chinosol, 1, 2, 4-xylenol, p-chloro-m-cresol and menthol were very faintly active, while most of the remaining materials were entirely ineffective.

Mists and smokes of resorcinol and of hexylresorcinol furnish satisfactory germicidal aerosols, according to C. C. Twort and A. H. Baker,³⁶ who also discuss suitable methods of generating such mists.

Propylene glycol has been figuring prominently in recent discussions of germicidal aerosols. O. H. Robertson, E. Bigg, T. T. Puck, B. F. Miller and E. A. Appell³⁷ found that a propylene glycol concentration of as little as one gram per two to four million cubic centimeters of air produced rapid and complete sterilization of an atmosphere into which pneumococci, streptococci, staphylococci and other bacteria, as well as influenza virus have been sprayed. Propylene glycol vapor is invisible, odorless and non-irritating; the chemical itself is practically non-toxic when administered orally or intravenously. According to A. H. Baker and C. C. Twist, however, disinfection of the atmosphere by means of bactericidal aerosols is markedly influenced by humidity.³⁸ The number of bacteria capable of surviving decreases often many fold, as a result of an increase of humidity by 40 to 60 per cent. This effect was noted when employing as aerosols either heat volatilized or mechanically nebulized materials, although the magnitude of the effect varied with the antibacterial agents and the methods of producing the mists.

Antibacterial Substances from Living Microorganisms

This is perhaps the most modern field of our survey and it is yielding results of extraordinary interest. Following the original findings of R. J. Dubos, numerous other investigators turned their attention to the problem of occurrence in, and extraction from fungal and bacterial sources of substances with a truly amazing bactericidal potency, surpassing in many instances that of the most potent

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synthetic bactericides known. While the riddle of chemical structure of these "natural" germ killers is being probed into, its solution is still rather remote; and even more remote appears to be the prospect of the crowning achievement of their chemical synthesis. However, some light is shed upon their composition in several recent papers. Thus F. Lipmann, R. D. Hotchkiss and R. J. Dubos^(39, 40, 41) find that gramicidin hydrolyzates contain alpha-aminoacids, 45 per cent of which have the d-configuration; tyrocidine contains d-aminoacids amounting to 20 per cent of its content of alpha-aminoacids. The simultaneous occurrence in the molecules of these substances of d- and -l- aminoacids may be responsible for their resistance to ordinary proteolytic enzymes. Incidentally gramicidin and tyrocidine have been isolated from cultures of the aerobic sporulating *B. brevis*.⁴²

An excellent source of penicillin, first obtained by Fleming, was found in cultures of *Penicillium notatum* by K. Meyer, E. Chaffee, G. L. Hobby, M. H. Dawson, E. Schwenk and G. Fleischer.⁴³ Enough of this labile material has been isolated and subjected to a chemical analysis to suggest that its brutto formula probably is $C_{14}H_{17}NO_5 \cdot H_2O$. Although inactive against the Gram-negative *Es. coli*, penicillin is active against a suspension of 2 to 3 million hemolytic streptococci in the incredibly low concentration of one to 32 million.

A. E. Oxford, H. Raistrick and G. Smith⁴⁴ isolated penicillic acid from cultures of *Penicillium puberulum* and *P. cyclopium*. Unlike Fleming's penicillin which is most effective against Gram-positive strains, penicillic acid shows a marked antibacterial action against Gram-negative bacteria. Other, different varieties of antibacterial agents were isolated by this group of investigators from other species of *Penicillium*. Thus *Penicillium citreum* Thom yields citrinin, with a selective action upon Gram-positive bacteria⁴⁵; *Penicillium spinulosum* Thom yields spinulosin and *Aspergillus fumigatus* Fresenius, fumigatin, the latter being particularly powerful with respect to *Vibrio cholerae* *B. anthracis* and cer-

tain strains of *Staph. aureus*.⁴⁶ Incidentally citrinin may be isolated in fairly large yields from the mold *Penicillium citreum* Thom; as much as two gram from each liter of media is said to be readily obtainable.⁴⁷

A new selective bacteriostatic and bactericidal agent, streptothricin, has been obtained from a soil actinomycetes by S. Waksman and H. B. Woodruff.⁴⁸ The authors assume that this substance is formed from certain aminoacids present in the culture medium. Streptothricin is bactericidal especially for certain Gram-negative species, and bacteriostatic for some Gram-positive and many Gram-negative strains.

Not only molds are capable of generating antibacterial substances; this capacity is shown also by certain bacteria such as *Pseudomonas pyocyanea* which, according to R. Schoental produces pyocyanin, an effective antibacterial agent.⁴⁹ It may be extracted with chloroform from the bacterial culture, together with alpha-hydroxyphenazine and another colorless material which also exhibit antibacterial properties. P. Weiland⁵⁰ showed that the S-phase of *B. mesentericus* in broth yields a filtrate with specific bactericidal efficacy with respect to *Corynebacterium diphtheriae*.

Theoretical and Methodological Studies

A resume of the mathematical aspects of the destruction of bacteria by disinfectants has been contributed by O. Rahn⁵¹. It has been known that bacteria are killed under these and other conditions in such a way that the logarithms of surviving cells at any one time, when plotted against this time, fall on a straight line. The disinfectants can be compared by computing the death rate constant K, using the equation $K = 2.301/t \log N/N_t$ where N is the initial number of bacteria, N_t their number after the elapsed time t of contact with the disinfectant. There is a wide variation among the different disinfectants as to the effect of the concentration upon germicidal efficacy. Thus in the case of hydrogen peroxide, K is proportional to the square root of the concentration while in the case of formaldehyde it is pro-

portional to the square. The temperature coefficient of the reaction in question is about three.

The effect of the basicity of 5-aminoacridines upon their bacteriostatic power has been investigated by A. Albert, S. D. Rubbo and R. Goldacre⁵² who find these two variables to run parallel.

C. M. Brewer⁵³ contributed a very timely discussion of the use of *Staph. aureus* in the testing of antiseptics. Particularly interesting is his emphasis upon the fact that this micro-organism can acquire a resistance significantly higher than that required by the F. D. A. method, and he describes the means by which this end may be achieved.

A paper by H. Welch, A. C. Hunter and C. M. Brewer⁵⁴ advocates the adoption of a new method of determining the tissue toxicity of antiseptics which depends upon the comparison of their minimum germicidal concentrations for *Staph. aureus* with the minimum concentrations inhibitory to phagocytosis of this micro-organism by artificially opsonized leucocytes.⁵⁵ The basic premises of the proposed method, its technical aspects and applicability to practical conditions have been subjected to a critical discussion by E. G. Klarmann.⁵⁶

The problem of tissue toxicity of antiseptics received treatment at the hands of other investigators as well. Thus B. Witlin⁵⁷ uses embryonated eggs which are injected on the ninth and twelfth days respectively of incubation with the various dilutions of the antiseptics being tested. The minimum fatal dose for the chick embryo is compared with the minimum bactericidal concentration for *Staph. aureus* in vitro and the toxicity index calculated therefrom. The injection must be made upon the chorio-allantoic membrane of the egg. The 12-day embryo showed a higher resistance than the nine-day-old one. Of 12 commonly used antiseptics only tincture of iodine and hexylresorcinol gave toxicity indexes under one, all other gave those over one. Embryonated eggs were used also by T. W. Green and J. M. Birkeland⁵⁸ for the study of germicides along the above lines, while M. M. Hirsch and M. V.

Novak⁵⁹ rely upon the inhibition of phagocytosis in their study of 24 common germicidal preparations.

Miscellaneous

Under this heading will be grouped a number of references to antibacterial products and processes not classifiable under any of the other headings.

R. E. Prescott, R. C. Dosser and J. J. Sculati^{60, 61, 62} received several patents for germicidal and fungicidal derivatives of boric acid of the general formula $(RO_3)B$ where R is an aromatic radical. These organic borates hydrolyze readily in water. Following are some examples of the compounds covered: tri-orthotolyl borate, tris-(2-phenylphenyl) borate, tris-(4-cyclohexylphenyl) borate, tris-(4-chlorophenyl) borate.

H. W. Rhodehamel, Jr. and E. F. Degering⁶³ prepared a number of thiophene derivatives in order to compare their germicidal action with that of the related compounds of the benzene series. *Staph. aureus* was used as test organism in plain and in 10 per cent serum agar. None of the compounds showed an outstanding bacteriostatic activity. The conclusion is drawn that the substitution of the thiophene for the benzene nucleus yields the same or a slightly greater antiseptic activity with respect to *Staph. aureus*.

According to W. Neugebauer⁶⁴ the attachment of a high molecular alicyclic radical to the sulfur atom of isothiourea produces an efficient disinfectant agent. Impregnation with methylthiuram mono- or di-sulfide of fabrics renders them antiseptic, as shown by R. H. Guinzburg.⁶⁵

When certain di- or polycarboxylic acids are heated above 200° C. with aliphatic or cycloaliphatic 1,2- or 1, 3-diamines, imidazolines and tetrahydropyrimidines are formed which are said to be effectively germicidal, according to A. Chwala⁶⁶; when further combined with chlorobenzyl chloride they may be applied in mothproofing.

A stable oxidizing combination is claimed to be one consisting of an alkaline earth peroxide and an amino-sulfonic acid, both in solid form; when

dissolved in water the mixture liberates hydrogen peroxide⁶⁷.

V. Fisher⁶⁸ investigated the action of surface tension reducing agents when upon the bactericidal activity of a number of disinfectants. When added in a dilution of one to 1,000 these surface tension depressants, whether cationic, anionic or neutral, enhance the activity of mercuric chloride, mercuric oxycyanide, chloramine T, argyrol and potassium permanganate while little or no increase was noted in the case of phenol, cresol or tincture of iodine.

A contribution to the problem of disinfection with alcohol of objects contaminated with bacterial spores has been made by Witz⁶⁹. Pathogenic anaerobes such as *B. perfringens* and *B. oedematiens* are little affected since 20 per cent of alcohol permitted their growth. Alcohol is even less effective against saprophytes such as *B. subtilis* or *B. mesentericus* whose growth continues at 37° C. in a medium containing 40 per cent of it. Immersion in 70 per cent alcohol of instruments artificially contaminated with spore bearing organisms resulted in only partial disinfection.

A patent was granted to M. T. Leffler⁷⁰ for an antiseptic combination of colloidal silver bromide with acacia and a water-soluble polyhydric alcohol or non-reducing sugar. The precipitation of a silver albumin compound and its fixation within the capillary fibrous structure of sponges is covered by a patent issued to S. Rosenzweig.⁷¹

E. Foley and C. O. Lee⁷² carried out a determination of the antiseptic potency of a number of substances in various ointment bases.

A review of the problem of disinfection of cutting oils was published by J. Varley.⁷³

A paper of interest in connection with the problem of skin disinfection has been published by D. M. Pillsbury, C. S. Livingood and A. C. Nichols⁷⁴. Commercial soaps of fatty acids are not effective antiseptics when employed in the usual concentrations and the mechanical action of washing and scrubbing is important for the lowering of the bacterial count. The application of antiseptic ointments such

as of those containing ammoniated mercury or phenylmercuric nitrate has no decided effect upon the residual flora of the skin. Potassium permanganate, boric acid and aluminum acetate are also relatively ineffective in reducing this flora and combination with wetting agents does not help much. However, 70 per cent alcohol is extremely effective in lowering the skin's bacterial count.

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(Turn to Page 107)



What the Pueblos found out about packaging

THE early Pueblo Indians of our great Southwest were the original cliff dwellers. They solved their "packaging problem" by living up in the air.

Pueblo cliff dwellings hugged the sheer cliff sides, backed up against towering walls. Enemies couldn't attack from the rear—the back of the house was protected. So was the front of the cliff dwelling, because the only access was up the cliff side, where the Pueblos could keep close watch.

But this double protection from human enemies was not all the Pueblos did. They found out that their "package," exposed as it was to the sun, wind, and rain, needed still more protection. So they covered their cliff dwellings with a mixture of burned gypsum, to protect them from erosion. That's how they improved their "package," and made it a real success.

Improving packages is an important part of Continental's service. We know that packages which are sturdy, good-looking, and specifically designed to do a job, help to make the sales curve zoom. That's why Continental has become known as packaging headquarters for industry.

Today, millions of cans for America's civilian food supplies, for Army, Navy rations, for beleaguered nations, are rolling out of Continental plants. So are other vital things for Uncle Sam's needs. All are packages to protect America!

Looking into the future we see many new packages—ideas which must be held until another day. But, for those who are planning ahead, we offer the services of our packaging engineers, research men and designers. They will be glad to work with you.

CONTINENTAL CAN COMPANY

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The package of the future will be the package that best meets *all* these 10 important points:

1. Protects against light, heat, and dirt.
2. Does not chip, break, or tear.
3. Is adaptable to *highest* speed filling operations.
4. Is economical to pack, ship, and handle.
5. Light weight, compact, no waste space.
6. Moisture and vapor proof, impervious to temperature changes.
7. Easy and convenient to display, sell.
8. Available in wide variety of sizes, shapes, styles (over 500).
9. Offers maximum convenience and safety in consumer usage.
10. Permits high processing temperatures, certain hermetic sealing.

These points made the metal container *first* in packaging. If there ever is another package that has *all* these qualifications, we'll be making it!

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GILBERT COLGATE, FORMER CHAIRMAN AND PRESIDENT, COLGATE & CO., DIED OF A HEART ATTACK



SUPREME COURT RULED IN FAVOR OF SOAPERS. CASTILE LABELS WERE ALLOWED ON SOAPS CONTAINING OILY AND FATTY ELEMENTS OTHER THAN OLIVE OIL



R.R. DEUPREE OF P&G RE-ELECTED PRESIDENT OF ASGP AT ANNUAL MEETING AT NEW YORK'S WALDORF-ASTORIA

COCONUT OIL BECAME A POLITICAL FOOTBALL



HUEY LONG INTRODUCED AN AMENDMENT TO THE PHILIPPINE INDEPENDENCE BILL IN CONGRESS TO REDUCE ANNUAL IMPORTS OF DUTY-FREE COCONUT OIL BY 25% -FROM 200,000 TO 150,000 TONS



BERGAMOT DOWN TO \$1.30 LB. IN N.Y. AND STILL DECLINING

SO LONG



THE CLEANLINESS INSTITUTE, ASGP SUBSIDIARY, WAS DISCONTINUED DUE TO ECONOMIC CONDITIONS



LOOK JOE, THEY KNOCKED DOWN THE PRICES

ADVERTISED BRANDS WERE CUT 10 TO 20% IN 1933 PRICE SCHEDULES TO JOBBERS

Insecticide Marketing Problems

By A. W. Morrison*

Socony-Vacuum Oil Co.

IN the marketing of household insecticides, the industry is faced with many problems and conditions, some of which are beyond our control, but nevertheless have their effect upon regular marketing procedure. We find today that the retailer is not doing "business as usual". He is without items many of which contribute much to his livelihood. He is faced with empty shelves, lack of displays, and lack of profit. He is seriously affected by the lack of man power. This is our opportunity to do a better job in marketing insecticides,—an opportunity to keep up or enlarge, if you will, our display and advertising assistance.

We have a large market in institutions, public buildings, schools, restaurants, etc. All such places, for the sake of sanitation and health, need our products more than ever. They need *good* products to do a real job,—a job which has to be done with fewer people and less often these days. Our farm market is large and in a better position to buy today than ever before. Let's not cut down our activity to serve this market, but rather hold our position and build up in the minds of the farmer the need and benefits that come from the use of our products. All these thoughts are fine *if . . .* —*if* we have products; *if* we have packages; *if* we have a sales organization. Let's take a look at these problems separately.

Raw Materials:—All business which relies on the chemical industry to provide the raw materials from which to make their products in the past year has been faced with the uni-

versal problem afforded by the lack of materials or the inability to get them due to Governmental control brought about by war emergencies. Laboratories all over the country have been working on new formulas for many products and it is gratifying to see that the untiring efforts of the chemists have, in many cases, found substitutes which are doing the required job and are even effecting improvements in some instances.

It is true that in the insecticide industry we have not, as yet, found the answer we need to take care of our requirements fully. We are all aware of the conditions which have brought about the shortage of active ingredients for insecticides such as we have used in the past, most of them being due to the unusual requirements of our armed forces at this time. There is no doubt that many laboratories throughout the country are applying themselves to extensive research in the endeavor to find an answer to this very serious problem. We have great faith in their ingenuity and perseverance and feel certain that they will find an answer which will prove of great help to us all. We are waiting patiently for this word and, may I say, also anxiously.

Packages: — We have seen changes in packages, mainly from tin to glass, many of which have proven to be just as attractive as the old style, and in some cases, we can even see improvements. In watching the package changes in our own industry, I think we can well say that we have solved the package problem for the retail sizes of insecticides. We are seeing many brands on the shelves these days packed in glass, and they look most attractive. We have also

noticed evidence of a reduction in the variety of sizes.

We are faced, of course, with the problem of packaging our products in containers over the gallon size, due to the inability to secure 5-gallon pails or drums, or any kind of 5-gallon metal container. We still have the 55-gallon drum available which, of course, must be used on a returnable basis. This means that, particularly in connection with our cattle spray business, we will have to confine the sale of our products in large sizes to the 55-gallon container and rely on the farmer to bring in his old 5-gallon container for refilling at the dealer's place of business. We do not believe this is an insurmountable problem.

We have one other problem in connection with the smaller packages,—the one-gallon size jug in the New York City marketing area. This problem is peculiar to New York City, due to their Fire Department regulations as a product of this kind cannot be sold in a glass container any larger than the one-quart size. This means we cannot sell our household insecticides to the retail stores, restaurants, institutions, etc., in the popular one-gallon size. However, I am glad to be able to report that our Association has already been working on this matter for some time and it is hoped that we will have satisfactory results in bringing about a change in the regulations which will permit the sales of insecticides in one-gallon glass jugs as well as in the five- and 13-gallon glass carboys.

Another problem which faces the marketing end of our business is the additional freight cost which has been brought about due to the change from tin containers to glass. I have been advised that our Association,

* Report of Chairman, Insecticide Marketing Committee, 29th Annual Meeting, Natl. Assn. of Insecticide & Disinfectant Manufacturers, New York, Dec. 7, 1942.

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which is well represented on the Industry's Advisory Committee, is constantly in contact with the WPB and OPA at Washington and is presenting these facts to them in the hope of obtaining relief by means of price adjustments.

Sales Organization:—We have all experienced the loss of salesmen, due to the demands for military service or other war time efforts. These men cannot be replaced easily, if at all, and those men that we still have have been forced to reduce their travel to a minimum, because of gas rationing and overcrowded transportation facilities.

Through these shortages we are apt to lose touch with our trade, if we fail to find and employ other means of maintaining close contact. As a suggestion,—the U. S. A. still will carry a letter for three cents, and do a good job of it! But, let's make sure we ask Uncle Sam to carry and deliver something worth while. Who knows?—Maybe the customer will catch on and place an order by mail, too!

Spray Guns: — We all know that in marketing insecticides it is important to have a spray gun. As our guns previously have been made of 100 per cent metal and we no longer are able to secure metal for this purpose, we are faced with the problem of finding a means of applying our products. One or two companies have been endeavoring to make up a substitute gun but, at this time, we have no definite word whether or not we will be able to have these for the industry's use. If we can find no relief for this condition, we will just have to depend upon the guns which have been distributed in past years and are now in the hands of insecticide users.

Army Specifications and Bids: —We have all been deeply concerned about the way some recent Army bids have been handled, in connection with their requirements of insecticides. It is evident that many persons never before having any experience in this field were suddenly put in charge and those, who have been in the insecticide business for years with established reputations for supplying products of highest quality and in perfect agreement with all specifications, are being left out in the cold

with no opportunity to serve their Government with quality products.

It is our understanding that our Association has given this problem a great deal of thought and is arranging for a special committee to take this matter in hand and establish direct contact with the responsible parties in our Government at Washington, with the direct responsibility of keeping us advised and assisting us, as an organization, to straighten out this situation.

Conclusion: — In closing, we feel that even though we cannot be sure about the months which lie ahead, due mainly to the raw material situation, we must keep firmly in mind the fact that our industry is a vital one and we, as individual members, have a real opportunity to play our part in keeping the merchants with whom we have done business in the past years, alive to the possibilities of the insecticide market.

No doubt, it seems easier to many of us to "pull in our horns" at this time and forget to advertise our products,—but we should take a second look at any such decision and decide instead to do quite the opposite by keeping ever after this important market, seeing to it that the public is kept "insecticide conscious" and not fail in supplying the needs for that market. This is a good time to think up new ideas for displays and to give the merchants new merchandising suggestions. Above all, let's never try to get along with a "second-grade" product but to maintain the high standard of quality in the merchandise we manufacture and market. The usual slogan these days is "Keep 'Em Flying." But in the insecticide industry, we should say—"Keep 'Em Dying!"—and, of course, I mean the insects!

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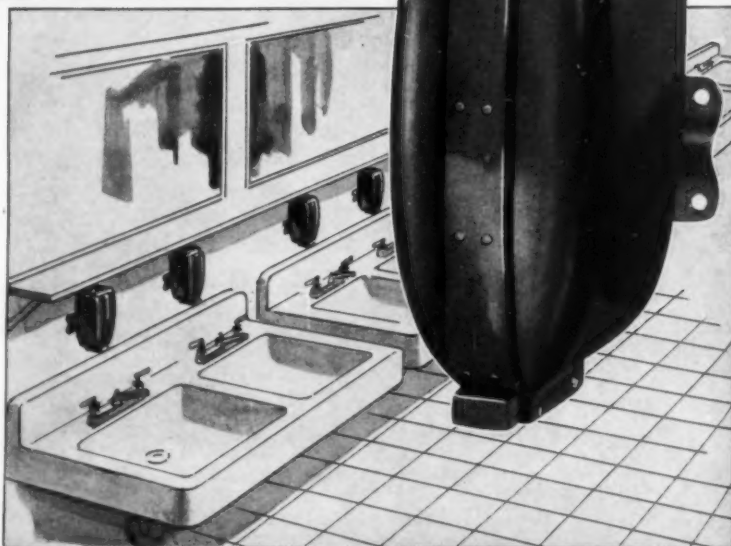
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THE INSECTICIDE LAW . . .

Enforcement of the Insecticide Act of 1910 under war-time conditions outlined

*By Dr. E. L. Griffin**

*Insecticide Div., Agricultural
Marketing Admin., U.S.D.A.*

THERE has been no change in the requirements under the Insecticide Act because of the war. None of its provisions has been abrogated and there have been no Governmental orders extending its scope. Nevertheless, the war has had a strong influence on its enforcement.

Insecticides and fungicides (including disinfectants) are now of greater importance than ever before. Losses of agricultural products to insects or fungus diseases are a serious menace in view of the present extended needs for our armed forces, our allies, and our civilian population, and of the shortage of workers to produce them. Destruction of stored foods and manufactured articles by weevils, roaches, moths, and other insects must be prevented insofar as possible. Likewise, we can ill afford losses of manpower due to insect-borne diseases or diseases carried by contaminated premises, equipment, or instruments.

While the industry faces these needs, it is also confronted by shortages of most of the standard materials used in the manufacture of insecticides and fungicides. This has led to changes in formulas and substitutions, and to the necessity of adopting new containers and new labels. The Agricultural Marketing Administration recognizes the necessity for these changes and is in entire sympathy with those manufacturers who are attempting to reduce waste by salvaging packages and labels already on hand. At the same time, it is responsible for enforcement of the requirement of the Insecti-

cide Act that labeling must be truthful.

Honesty in labeling is important from the standpoint of both the manufacturer and the consumer. If the consumer purchases an insecticide or disinfectant, he wants to know whether or not it will serve his purposes. If it is a complete answer to his insect, fungus, or disinfecting problem, so much the better; but if it is only a partial answer—perhaps the best that can be produced under present conditions—this information should be given him.

In certain cases,—as, for example, rotenone-bearing materials,—it may be found necessary for the proportion of the active ingredients in an insecticide to be limited in order to spread the available supplies over a larger proportion of the crop to be protected. The rotenone content permitted may be too low to give the control which is desired under normal conditions, but the total crop may be greater when the use is thus extended. In such a case, the label should be frank in its explanation of the circumstances. To fail to be truthful and frank in the labeling is likely to lead to a loss of confidence, which has cost the manufacturer both time and money to procure,—as well as to a lack of insect, fungus, or bacterial control which the user might have obtained by supplemental measures.

Cases have occurred where producers of sodium hypochlorite solution have patriotically wished to save chlorine by putting only 3 per cent of sodium hypochlorite in their product while the labeling still claimed that it

contained 5.25 per cent; and where cresylic disinfectant manufacturers have desired to save cresylic acid, with similar excellent motives, but without proper label changes. The same type of misbranding has been found in connection with insecticides containing other critical materials such as arsenicals, fluorine, etc. The Administration urges the avoidance of waste of all critical materials and is in complete sympathy with the desire to market insecticides containing them in such a way that their use will be economical, but a clear statement of the change which has been made and of the results which the new product will accomplish would overcome any suggestion of ulterior motives in weakening the preparation.

To sum up, it will be the purpose of the administration in enforcing the law to make sure (1) that the insecticides, fungicides, and disinfectants found in interstate commerce will do what their labeling states they will do,—that is, that they will protect the crops, animals, households, or other environments for which they are intended; (2) that they bear the required statements as to composition and that any statements relative to the composition are correct; and (3) that if the product is to be used on vegetation, it must not be injurious to such vegetation. At the same time, every effort will be made to conduct this work in such a way as to cause as little loss and inconvenience as possible to the manufacturer who, through the exigencies of war, must change the composition and labeling of his product.

* Paper before the 29th annual meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec. 7, 1942.



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CONTAINER SITUATION . . .

Glass bottles, closures, and paper packaging needs for insecticides and disinfectants discussed

By E. F. Bertrand*

Owens-Illinois Glass Co.

THE glass industry is operating under Simplification Limitation Order L-103. That order forbids the making of molds for new shapes or sizes not existing in our industry today. Where necessity warrants, iron for new molds might be secured upon a packer's application to the Container Section of W.P.B. To our knowledge, some few requests for new molds for new items have been granted, but the majority of such applications have been denied, and we might add that, again, to the best of our knowledge, very few such applications have been filed.

Beyond the limiting of the manufacture of new molds, Limitation Order L-103 has definite schedules that control the sizes and shapes of glass bottles permissible for use in the packaging of whiskeys, wines, beers, and some food products. Schedules for other industries are being considered and may be published in the near future; to the best of our knowledge, no definite information is available at this time.

Most of the people in the household insecticide industry who now pack in glass bottles have adopted what is generally known as an Amber Boston Round. That shape, probably the oldest in the glass industry, lends itself to lighter weight and greater strength, because of its design. We think that those of you who have chosen the Boston Round bottle for your packing have been wise in your selection, not only from the weight and strength factor, but also because

should W.P.B. Containers Group issue a schedule relating to sizes and shapes of glass containers permissible in your industry, there is no doubt in anyone's mind but that the Boston Round will definitely be in the schedule.

We are frequently asked why people in Washington want simplification schedules relating to glass containers, inasmuch as practically all of the ingredients used in bottle manufacturing are not strategic. The answer, of course, is that through standardization and simplification, machine speeds are increased and fewer job changes decrease loss of production time, thereby giving packers of many products more containers now necessary because of the present restrictions on containers made of materials other than glass or paper.

While I am not an official spokesman for the glass industry, I feel confident that every manufacturer in our industry is prepared to make glass containers to the extreme limits of existing machine capacity. Even with that capacity, it is doubtful if the glass industry will be able to serve all firms that will need containers, and I recommend that if you have not already made arrangements for containers with a glass manufacturer, you do so at once!

Just a word about the materials situation in the glass business,—we believe there will be sufficient sand for the making of glass containers, although certain grades are somewhat short, at the moment, because of their use in the making of aluminum. The soda ash situation is in better shape

than it has been in the past, and while we are not optimistic about that fact, we believe that we shall get through without real serious difficulties. Lime represents no problem, and there is little possibility that a shortage will occur. Feldspar is in fair shape, but decolorizing agents and materials for applied color lettering are short.

Paper Situation

While the paper situation in 1941 was most acute, the splendid work done during that trying period effected many worthwhile economies to a point where to date in 1942, there has been very little difficulty on the part of the paper mills in supplying the demand.

Unfortunately, this easy condition is not going to last, as General Conservation Order No. M-241 covering the paper industry again puts a big question on the supply of paper of all grades. Among other things, the order relates that production of paper shall be confined to 100 per cent of the average monthly quantity in tons of paper and paperboard produced in mills during the six months' period from April 1, 1942 to September 30, 1942, inclusive. During this period paper mills were not operating at peak capacity, and many of the high-cost mills which were reopened during 1941 to take care of the large demand for all grades of paper had been again closed down. The order further relates that any mills which were not operating August 1, 1942 cannot again be brought into operation. The purpose of the order is to conserve manpower, electrical power, transportation,

* Paper before 29th annual meeting, Natl. Assn. of Insecticide & Disinfectant Mfrs., New York, Dec. 8, 1942.



NEVER FALTERING PRODUCTION . . .

A SOLDIER, sailor or aviator without weapons is of little value toward winning a war. It is of utmost necessity that we keep our fighting forces supplied with necessary materials.

Workers in defense plants are vital to America's fighting efficiency. There must be no unnecessary lost time because of accidents and sickness. Safety is essential.

Improper or poorly maintained floors contribute to accidents, illness and lowered production. The vital need for continuous, uninterrupted production has placed a serious responsibility squarely on the shoulders of floor finish manufacturers.

Federal recognized more than two years ago that a need for floor sealers and finishes that could be applied quickly and would dry rapidly without causing interruption to production, that would give a smooth, non-slippery surface to provide security for workers and that would be easy to clean in order to save maintenance time and labor would be a wartime necessity. Federal chemists were put to work to make just such products to meet wartime conditions. Federal chemists have responded with products that have more than met the expectations of floor maintenance men in practically all lines of war production.

Free Literature on Floor Finishing and Maintenance

FEDERAL VARNISH CO.

FLOOR FINISH DIVISION

DEPT. 143
CHICAGO

331-337 S. PEORIA ST.
ILLINOIS

FEDERAL



FULL- FLOATING PENN-DRAKE INSECTI-SOL

Keeps Your Product in

PENETRATION-VAPOR

longer

The full-floating penetrating vapor of Penn-Drake INSECTI-SOL is an ideal vehicle for the quick killing properties of your insecticide.

These fine features make Penn-Drake INSECTI-SOL an ideal solvent base that warrants your immediate trial: Crystal clear and always odorless, 100% volatile, full-floating penetration, contains nothing to soil clothing, drapes, rugs, etc.

Write...Dept. 109 for information that will show you how to improve the action of your insecticide and boost your sales.



Mothcides...Penn-Drake Deodorized Naphtha provides the perfect base for mothcide preparations. Write for complete details.

PENNSYLVANIA REFINING CO.

General Offices: BUTLER, PA.

Refineries at Karns City and Titusville, Pa.

MAKERS OF
WHITE OIL, TECHNICAL OIL, PETROLATUM, PETROLEUM SULPHONATES, ETC.

etc., as well as the conservation of wood pulp, much of which goes into the manufacture of explosives and other critical materials.

The lack of lumber for the manufacture of wood containers will require additional quantities of paper where it is possible to substitute paper for wood, from which we can gather that there is again a possibility of another tight situation facing us on paper during the coming year, providing that all commodities now manufactured and packed in paper will still be manufactured during 1943. Evidence of the results of M-241 (which covers all grades of paper) is already beginning to show up in the reduction in size of many magazines and periodicals currently on sale.

Transportation regulations and lack of experienced help have resulted in the railroads' asking for improvements in boxes currently used, which would require a larger amount of tonnage than is necessary today.

Order M-241 has been in effect since October 31st and the full import of what this will mean to the shipping container industry (in which you are vitally interested) has not yet been determined. We don't know whether an easing of this order will be permitted, but we are hopeful that ways and means will be developed to assure an adequate supply of shipping containers for all essential needs. We believe the most serious thing that could happen to further muddy the waters would be a buying rush, in an attempt to try to cover ahead for a long period of time, which was one of the principal factors in the situation which existed during the critical period of 1941.

Metal and Molded Cap Situation

Since no completely practical substitute has been developed for closures for insecticides and disinfectants, we must depend upon metal and molded screw caps for sealing glass containers. Unfortunately, we have no real clear pattern with regard to the future availability of metal and molded caps for these products. M-104, the Metal Closure Order, has been completely rewritten and we under-

stand it is now circulating through various sections of W.P.B. for approval.

Whereas the earlier editions of M-104, including the one still in effect, were of the negative type,—that is, they merely stated what products were denied tin, terne or blackplate,—the new order will be of the positive type and will list the products which are allowed metal, at the same time stating the type of metal permitted and the extent to which closures will be allowed. We understand the new order will not include a food-products table at the time of issuance, as this is quite involved and will presumably follow in 30 to 60 days. Tables, however, will be included covering beverages, health supplies, household and industrial specialties, and chemicals. It seems reasonable to assume that blackplate will be permitted for insecticides and disinfectants, although it is difficult to forecast what restrictions, if any, may be imposed upon closures for this purpose, pending actual issuance of the order.

Regarding molded closures, General Preference Order M-246 provides for allocation of phenolic resins and phenolic resin molding compounds effective as of December 1. Forms covering our applications for phenol molding compound for December have been returned to us and if we can accept these forms as setting up the pattern which may continue, it appears that we shall be denied phenol compound for making closures for liquor and wine bottles. In addition to this, there has been some curtailment, although not too severe, on the use of phenol compounds for cosmetic and toiletries. Requests for compound for medicinals, pharmaceuticals and chemicals were granted in the amount asked for. Here, again, it seems reasonable to assume that phenolic compounds will be available at least to some extent for closures for sealing insecticides and disinfectants. In the absence of phenol compounds, it is of course possible to make closures from urea-formaldehyde material, although the extent to which phenol is curtailed may have some bearing upon

the availability of urea. The allocation plan has not been in effect sufficiently long for us to determine the affect it may have upon this problem.

Liners for closures present a problem since vinylite is no longer available. There appears to be plenty of black alkali paper, oil paper, and white waxed paper. Certain resin-coated papers such as "silite" can be used as a substitute for vinylite. If there is any question with regard to the best substitute for sealing your product in cases where you have been using vinylite and can no longer secure that material, we suggest you check the matter with your closure manufacturer.

Several attempts have been made to assess the relative insecticidal values of the main active constituents of derris root,—rotenone, toxicarol, and deguelin, but no very definite findings have emerged. It appears highly probable that the relative values differ to a great extent with different test insects. Two different criteria have existed for the evaluation of derris root. The first is that rotenone content is all that matters; the second that the total ether or solvent extract is the correct yardstick. During recent years it has been realized that a compromise is indicated and the value of derris root is assessed upon a combination of rotenone and total-extract contents. A good quality root will contain about 5 per cent of rotenone and 15-20 per cent of total extract. Derris is particularly suitable for control of fleas and certain forms of lice on animals and human beings. Derris insecticides are applied very largely as dry dusts but liquid forms are also used. G. A. Freak. *Chemistry and Industry* 61, 429-31 (1942).

Pyrethrum and aliphatic thiocyanates in refined oil as carrier have given satisfactory control of various species of *Ptinus* beetles in flour warehouses. Lye solution in a concentration of 1 pound to 5 gallons of water is effective in killing the insects in cracks in wood. H. E. Gray. *Pests* 10, No. 7, 10-13 (1942).

CHEMICALS



METALS · ORES

CAUSTIC POTASH

**Tetra Sodium
Pyrophosphate**

*Philippp Brothers
Inc.*

70 Pine Street, New York
Boston Hartford Providence

ROTENONE

and

DERRIS RESINS

Manufacturers of finished insecticides have come, over a period of years, to look to DERRIS, INC. as headquarters for rotenone and derris products of all types. We are specialists in this field and are prepared to supply specifically compounded products made up according to each customer's varying needs.

**Timbo Powder — Derris Powder
of Finest Grind**

DERRIS, Inc.

79 WALL STREET NEW YORK, N. Y.

**HOLLINGSHEAD
DELIVERS
THE GOODS!**

**FLOOR WAX
DISINFECTANTS
DEGREASING COMPOUNDS
CEDAR OIL POLISH
CREAM FURNITURE POLISH**

Here's a dependable source of supply for sanitary supply houses who have facilities for packing their own materials. The items listed above are now available in drum quantities. Generous samples gladly sent to rated companies. Write for details.

R. M. HOLLINGSHEAD CORP.

Industrial Division

Camden, N. J. 19 Rector St., N. Y. C.

Say You Saw It in Soap!



THE average business house receives a great many inquiries for its products or services every year which cannot be attributed to any special source. A vast majority of these probably originate from some form of advertising but, due to the general tendency toward not mentioning the names of publications, cannot be directly traced.

When you write to anyone advertising in this publication, say you saw it in SOAP. The advertiser will appreciate it—and so will we!



The Publishers

NEWS

Discuss Plans for Rotenone

A meeting of importers and processors of rotenone was held in Washington, D. C., by the Commodity Credit Corp., December 10, to discuss importation and allocation of supplies of roots to processors. Announcement of the meeting was made jointly by the Board of Economic Warfare and the Department of Agriculture. The meeting comes on the heels of official disclosure of a plan to purchase and import rotenone from Peru and Brazil through the CCC. The hope was expressed that at least 4,500,000 pounds of the root will be imported in the next year as a result of the U. S.-Brazil-Peru trade agreement.

Jones Balto. Drug Exchange Head

Lester W. Jones, director of purchases of McCormick & Co., was elected president of the Baltimore Drug Exchange, at the annual meeting recently. Mr. Jones, one of the younger group of executives at McCormick & Co., is a regular attendant of N.A.I. D.M. meetings.

Offer Odorless Deodorant

Hosdreg Chemicals, Inc., Huntington, Ind., is conducting a drive in the institutional and industrial fields on a new odorless deodorant in powdered form. The product is sprinkled or sprayed over an offensive spot or it can be applied with a trowel. It has a slight abrasive action, so when washed away it acts as a cleaner, the manufacturer states.

Marcuse Salvage Head

James E. Marcuse, president of West Disinfecting Company, Long Island City, N. Y. and newly elected member of the board of governors of the N.A.I.D.M., was chairman of the sanitary products group at a salvage luncheon held December 9, at the Hotel Roosevelt, New York. The purpose of the luncheon, at which

three members of various branches of our armed forces spoke, was to present a plan to collect and dispose of



JAMES MARCUSE

scrap needed for war production. The official sponsor of the luncheon was the Industrial Salvage Section of the War Production Board. The plan, explained by B. Merrill Decker, Regional Chief of the Salvage Section of the WPB, calls for the industry chairman, in conjunction with WPB officials, to appoint committee members in each of the industries represented to aid scrap collection.

Hollingshead Has Unique Service

Industrial "housekeeping," a program for plant sanitation, recently instituted by William Plowfield, industrial division manager of R. M. Hollingshead Corp., Camden, N. J., was described in a recent feature story in one of the Trenton, N. J. newspapers. Industrial "housekeeping" was the original idea of Stewart Hollingshead and the program has been promoted by Mr. Plowfield. The results have been very encouraging, it is reported, with Hollingshead sales being increased substantially following introduction of the plan. Originally, Hollingshead sent six women representatives into the field to introduce the proper methods and ma-

terials for correctives where sanitary conditions were unsatisfactory, and to attempt a program of education in addition. As Mr. Plowfield bluntly puts it, "they were to smell out dirt and decided on the best way to eliminate it and recommend ways to keep it eliminated." These Hollingshead housekeepers are said to be keeping very busy with their surveys as the program gains headway.

Non-flammable Floor Compound

A new sweeping compound, manufactured by the Philip Carey Mfg. Co., Lockland, Cincinnati, Ohio, has been tested by Underwriters' Laboratories, Inc., and found to be "non-combustible." The new sweeping compound, an asbestos product, was also described by the testing report as "chemically stable, shows no tendency to heat spontaneously and will not burn or evolve flammable vapors." It is marketed under the trade name Grease Ball Asbestos Sweeping Compound, and is said to contain no acid or caustic ingredients.

Offers New Insecticide

The Bengal Co., 212B St. Nicholas Avenue, New York, has announced a new stainless liquid insecticide.

WPB To Allocate Chlorine

Restrictions on the use of chlorine and products containing available chlorine have been revised to remove from control of Conservation Order M-19 all products containing available chlorine such as liquid sodium hypochlorite, calcium hypochlorite, sodium chlorite and other similar products. Also exempted from the order, as amended, are deliveries and use of 2,000 pounds of chlorine or less per month. The new form of Order M-19 is a straight allocation order replacing the previous conservation and allocation order. Under the new order, control over the whole chlorine family will be exercised by controlling original shipments of chlorine.

The change from end-use restriction to complete allocation control is made necessary because restrictions on consumption were too rigid when

chlorine was in easy supply and not tight enough when chlorine was scarcer. Under allocation control, instantaneous adjustments can be made in distribution and use control as the supply situation changes.

The new order says that after January 1, no person may deliver, accept delivery, or use chlorine except by specific authorization by the WPB. Exempt from these restrictions are users of 200 pounds or less per month, and delivery and use of chlorine for water purification and sewage treatment, so long as inventories are not more than 30 days' supply. Purchasers under the 2,000 pound exemption must file a certificate with their supplier. Forms PD-190 and PD-191 (revised) are to be used in applying for authorization under the order.

Monsanto Gets Triple "E"

A triple joint Army-Navy "E" award, believed to be the first of its kind, went recently to Monsanto Chemical Co., St. Louis, for the "fine record in the production of war equipment in three of the company's plants. Awards to the Monsanto, Ill., plant; the St. Louis plant; and Chemical Warfare Service St. Louis plant No. 1, at Monsanto, Ill., were made known in a letter to the company from Undersecretary of War Robert P. Patterson, early last month. This makes 15 Monsanto production awards. Formal presentations are being arranged by the War and Navy Departments to take place shortly after January 1. Managers in charge of the respective plants will preside over the ceremonies.

Watkins Bonus Totals \$250,000

J. R. Watkins Co., Winona, Minn., recently celebrated the biggest year (in volume of sales and number of dealers) in its 75 year history by distributing bonus checks totalling \$250,000 to its employees in the United States, Canada, and Australia. Bonus checks, given out for the eighth consecutive year, were also mailed to all Watkins men who have entered the armed service this year. Office employees received a sum equal to 10 per cent of their year's salary.

New Floor Wax Spec.

A new Federal specification (P-W-134) has recently been issued by the Director of Procurements covering Floor Wax, Solvent Type, Liquid (with resins). General and detail requirements are as follows:

D. GENERAL REQUIREMENTS

D-1. The liquid wax shall dry to a film that polishes easily to a hard, lustrous flexible surface. The liquid wax shall not be so highly colored as to stain the surface, and shall dry within 45 minutes to a semitransparent, nontacky film which shall show no signs of whiteness (see paragraph F-2b (1)).

E. DETAIL REQUIREMENTS

E-1. Liquid wax shall consist essentially of blended waxes with small amounts of resins in a volatile organic solvent. The liquid wax shall be a heavy bodied liquid mixture of sufficient fluidity to permit freedom of application at 20° to 25°C. There shall be no appreciable settling of the suspended material (see paragraph F-2b (2)). The liquid wax shall be smooth and shall be free from hard particles and granules.

E-1a. *Nonvolatile Matter (Total Solids).*—There shall be not less than 11 per cent, by weight, of nonvolatile matter in the liquid wax. The nonvolatile material shall meet the following requirements:

	Minimum	Maximum
Softening Point.....	71°C	..
Acid Value.....	..	18
Saponification Value..	40	85
Iodine Number (WIJS)	15	22
Ash Content,		
Per Cent .....	..	0.5

E-1b. *Volatile Organic Solvent (Vehicle).*—Shall consist of turpentine or volatile petroleum distillates, or any mixture thereof. The flash point of the volatile solvent shall be not less than 28°C. (closed cup).

Lethane for Head Lice

Successful experiments by both Canadian and British doctors with the use of "Lethane" for eradication of lice from humans are reported in a recent statement by Rohm & Haas, Philadelphia, manufacturers of "Lethane." First experiments for the control of head lice were conducted on school children and women government recruits by English doctors. The product was easily applied by hand or with a fine spray applicator, and avoided the offensive odors and unsightly oily appearance of older remedies. The remedy was said to be quick in taking effect, non-toxic and cheap.

Working independently in Canada on the same problem, Dr. Lloyd P. MacHaffie, Ottawa School Medical of-

Physical and performance tests are as follows:

F-2b (1). *Drying Time and Film Characteristics.*—Take a clear glass plate of a thickness not more than 1/4 inch. Spread 0.25 to 0.30 gram of the liquid wax over 40 square inches of the surface of the plate. Allow to dry in a horizontal position for 45 minutes at a temperature of 20° to 25°C. and a relative humidity of 50 to 65 per cent. The film shall be free from tackiness and shall show no signs of whiteness. When the film is viewed through the underside of the glass plate and by bright daylight transmitted through it, the film shall be from semi-transparent to clear and practically colorless.

F-2b (2). *Settling Properties.*—A graduated glass cylinder (with a ground-glass stopper) 10 inches in height and about 1 inch in diameter shall be filled with a thoroughly mixed sample of the floor wax. The cylinder shall be stoppered and left undisturbed at a temperature of 25° to 20°C. for 48 hours. The degree of settling of the suspended matter in the vehicle shall be noted. A separation of not more than 5 per cent by volume shall be allowed.

F-2b (3). *Performance Tests.*—Suitable clean pieces of linoleum and varnish-sealed wood shall be double coated with floor wax, each coat being polished when dry. The film shall have a lustrous finish and shall be free from tackiness. The film shall not crack when the piece of linoleum, with the treated surface on the outside, is bent over a bar or mandrel 2 to 3 inches in diameter through an arc of 180°. The linoleum used in the test shall be 3/16 inch thick material. The temperature shall be maintained at 20° to 25°C.

The new specification is to become effective not later than February 1, 1943, although it may be made official before that time.

ficer, described the effect of "Lethane" on head-lice (pediculosis) as "astonishing." He stated that through the use of "Lethane," infestations of entire communities could be quickly cleaned up and indicated his belief that this concentrate also would be highly useful in treating scabies. Tests showed that a single application of 15 per cent "Lethane" in deodorized kerosene killed all lice and nits and remained effective on the hair for several days.

Whisk Co. Moves

Whisk Co. of N. Y., makers of the "Whisk Kit" furniture polisher and cleaner, formerly of 801 Greenwich St., New York, moved January 1, to 105 E. 16th Street.

U. S. Insecticide Color Law Needed, Says Cox

A BASIC federal law governing the coloration of insecticidal poisons, if one existed, would be followed by most states just as they have in the case of state food, drug and cosmetic acts, according to Dr. Alvin J. Cox, Chief of the Bureau of Chemistry of the State of California, Sacramento, in a communication to *Soap & Sanitary Chemicals*. Commenting on insecticide coloration as a safety measure and the numerous problems involved, Dr. Cox stated in part:

"I have just read the editorial on page 100 of the December issue of *Soap and Sanitary Chemicals* with regard to the recent sodium fluoride case in Oregon, for which you are to be congratulated. This editorial states:

"The basic cause of this tragedy lies in the fact that a supply of white sodium fluoride could ever have made its way into an institution of any kind, and particularly into a state hospital for the insane. The absence of a strictly enforced law requiring tinted fluoride permitted these deaths to occur, and Oregon officials have nobody to blame but themselves. Human carelessness may have been a factor, but basically the law was at fault. And the sad part of such tragedies is that we know they will happen again and again, that they will continue to happen until white fluoride is banned for insecticidal use in every state in the country.

"As you know, this problem has interested me for some time, but I have been somewhat reluctant to suggest that California law be amended to require coloration of poisonous materials because there are so many difficulties in phrasing an adequate and satisfactory requirement. There are so many aspects to the problem that we have been uncertain about the advisability of handling this matter by state legislation due to the possibility of conflict and confusion. For example, one state might require both arsenic and fluorine compounds to be colored pink, and another state or municipality might require arsenic compounds to be pink, and fluorine compounds to be blue or green. It is obvious that conflicting requirements would present a huge problem to manufacturers. If there could be a basic federal law, it is my opinion that most of them would follow as they have done the Federal Food, Drug and Cosmetic Law.

"Other points to consider include the intensity of color. For example, commercial calcium arsenate adequately colored is frequently mixed

with equal parts, or more, of a white inert diluent to be sold as a dust. In this manner the color is diluted until it is almost imperceptible. Should the ideal law specify the intensity as well as the tint and other characteristics of a prepared dust?

"In discussing these problems, a federal authority told me that there had been some objection to coloration of poisonous materials inasmuch as the pink, blue, or green powders might be especially attractive to children. Also, certain colors might be unacceptable to the pests to be controlled.

"We agree with your stand that some requirement of law is needed, but we all wish to consider every advantage and objection before phrasing a requirement. Your comments on the problem and suggestions towards attaining national uniformity would be greatly appreciated."

Alexander with Sonneborn

Charles F. Alexander, for the past ten years a member of the sales staff of Seldner & Enequist, Brooklyn, chemical distributors, has just joined L. Sonneborn Sons, New York, as a special representative on white oils and petrolatum in the eastern area. Mr.

DCATS Names Williams

Election of officers of the Drug, Chemical and Allied Trades Section of the New York Board of Trade took place December 10, at the Chemists' Club, New York. Victor E. Williams,



VICTOR E. WILLIAMS

Alexander has long been a well known figure in the New York chemical trade, having won the golf championship of the Chemical Salesmen's Association several times, and serving currently as the chairman of the entertainment committee of the association. He was to assume his new duties January 11.

Ampion Xmas Sales Party

Ampion Corp., manufacturers of cleaners, soap dispensers, disinfectants and allied products, Long Island City, N. Y., held their year-end sales convention dinner at Leon and Eddies', Saturday, December 20. Wives and women accompanying the men were given silver vanity cases as favors. Approximately 40 were in the party.

Test "Natural" Insecticide

The 61st annual report of the N. Y. State Agricultural Experiment Station, Geneva, N. Y., indicates some success in controlling insect pests by use of parasites, disease spores and trapping of larvae to supplement a war-curtailed spray program. A total of 526 colonies of a parasite of the oriental fruit moth were liberated during the past year throughout the peach growing areas of New York state.

eastern sales manager of Monsanto Chemical Co., was elected chairman; Charles C. Caruso of Schieffelin & Co., vice-chairman; Robert B. Magnus, Magnus, Mabee & Reynard, Inc., was re-elected treasurer; Carl M. Anderson, Merck & Co., Inc., was re-elected counsel; and John C. Ostrom was re-elected secretary. Retiring chairman S. Barksdale Penick, Jr., president of S. B. Penick & Co., automatically becomes a member of the Section's advisory council, to succeed Joseph A. Huisking, of Fritzsche Bros., Inc.

It was announced that the 18th Annual Banquet will be held in March. Committees have not been named as yet. The final report of the membership committee made by Harold M. Altshul, chairman, revealed that 68 new members had joined the Section during the past year, bringing the total membership to a new high of 385.

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Flexibility In Crutcher Performance

The HUBER ELECTRO PERFECTION CRUTCHER offers a choice of four forward and reverse speeds. The flexibility in operating technique afforded by this wide choice of crutcher speeds should be decidedly interesting to many soap makers. Available in three sizes,—1,500, 2,400 and 3,200 pounds.



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"Builders of Good Soap Machinery for the Past 45 Years"
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COLORS

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Toilet Soaps Shampoos
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Does your product require a *certified color* under the new law? Let us advise you, and supply you with exactly the right color for the right purpose!

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MacNAIR-DORLAND CO.

254 W. 31st St.

New York, N. Y.

New Carnauba Replacements

Cornelius Products Co., New York, dealers in waxes of all types, have two new sets of carnauba wax replacements: non-rubbing 857 and 858; and carnauba wax replacements 885 and 886. N.R. 857 and 858 are intended primarily for the manufacture of water emulsion or self-polishing waxes. According to claims made by the company, tests show these two new non-rubbing waxes to be superior to carnauba wax.

Carnauba wax replacements 885 and 886 are designed for use in paste waxes, liquid solvent polishes and for all other purposes where carnauba wax is used, with the exception of water emulsion or self-polishing waxes. The replacements are free from graining or crystallization, it is claimed, can be blended with other waxes in practically all proportions, and have bodying properties equivalent to those of the natural carnauba.

Aromatic Doughboy A Hero

Second Lieutenant Louis Anthony Romani, former employee of Aromatic Products, Inc., New York, was recently promoted to that rank from sergeant for his part, with another sergeant, in the destruction of four German tanks and holding the road from Medjez-El-Bab in Tunisia. Both men, who manned self-propelled anti-tank guns, are from Brooklyn. Lieutenant Romani was a compounder in the New York laboratories of

Aromatic Products for about five years before entering the Army. The feat by the two men of destroying four out of nine German tanks was widely reported in the nation's press.

Louis Borsum Dies At 88

Louis Borsum, 88, inventor and early manufacturer of metal polish, died December 3, at his home in East Orange, N. J., after a brief illness. Mr. Borsum was born in Germany and came to the United States at the age of 27. He opened a small metal polish plant in New York, later moving it to Jersey City, N. J., where he expanded it. He retired in 1931.

Detroit Rex House Organ

Detrex News, monthly house organ for Detroit Rex Products Co., makers of Detrex degreasers, alkali washers and chemicals compounds, recently made its first appearance in the form of a six-page, 8 3/4 x 11 inch paper. The paper is mailed to employees' homes, to former employees now in the armed forces and to all field men and branch offices. Bulk of the editorial matter is contributed by employees.

Givaudan Sales Meeting

The maintenance of flexibility within the organization in order to give buyers the best possible service was stressed as a keynote of the recent year end sales meeting of Givaudan-Delawanna, Inc., aromatic chemical house, New York. The meeting was held

New N.A.I.D.M. Committees

The following new committees were announced, last month, by the National Association of Insecticide and Disinfectant Manufacturers at the recent convention in New York: Washington Specification Committee; Insecticide Group, Friar Thompson, Hercules Powder Co.; William Houde, John Powell & Co.; N. J. Gothard, Sinclair Refining Co.; D. F. Murphy, Rohm & Haas Co.; A. E. Badertscher, McCormick & Co.; Disinfectant Group, Jack Varley, Baird & McGuire, St. Louis; E. G. Klarmann, Lehn & Fink; J. N. Roche, Koppers Co.; R. B. Turner, Dow Chemical Co.; G. M. Baird, Baird & McGuire, Holbrook, Mass. The new N.A.I.D.M. executive committee consists of: Ira P. MacNair, MacNair-Dorland Co., Chairman; John Powell, John Powell & Co.; C. L. Weirich, C. B. Dolge Co., and W. J. Zick, Stanco, Inc.

Garden Insecticide Booklet

"Insecticides for Victory Gardens" is the title of a 16-page circular issued by South Dakota Agricultural Experiment Station, Brookings, S. D.

much earlier than usual this year in conformity with the wishes of the ODT to restrict civilian travel as much as possible during and near the holiday period. The meetings concluded with a dinner at the Hotel Lafayette, at which the sales department acted as host to office and plant executives





Play Safe—sell or recommend the 4 in 1 wherever your products are used.

- Used and approved by floor maintenance experts since July, 1939.
- Requires no metal whatever, thus assuring an unlimited supply in war time.
- A quality applicator backed by our many years' experience in the industry.
- Every square inch of the premium quality wool pad is usable. The 4 in 1 offers the best insurance that floor waxes, seals and other floor finishes are applied properly.

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2509-13 S. Green St. Chicago, Ill.

WE'VE BEEN LEFT HIGH and DRY



on
**ADAM A. BREUER'S
ELECTRIC
INSECTICIDE
SPRAYER**

Conditions have CHANGED!

—but with increasing restrictions. Every manufacturer, equipped to produce essentials, is called on in an all-out war effort in production. This situation in our plant is indicated by the fact that for the duration of the present emergency, we have ceased manufacturing Adam A. Breuer's ELECTRIC INSECTICIDE SPRAYER.

Our sincere desire is to serve our customers with their needs in Insecticide Sprayers, but in view of prevailing conditions we must ask you to continue being patient until we can again supply your Insecticide Sprayer requirements. For your cooperation and understanding we wish to express our appreciation.

We do not sell insecticides. Our business is the manufacture of Sprayers. (Patented in U. S. A. and foreign countries).

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5118 N. RAVENSWOOD AVE. CHICAGO, ILL.

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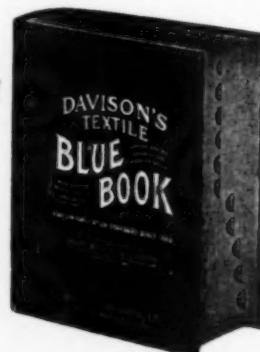
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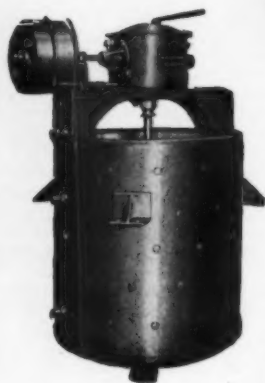
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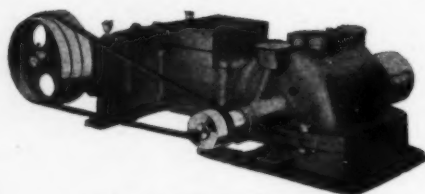
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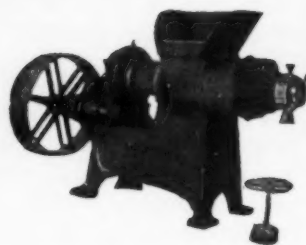
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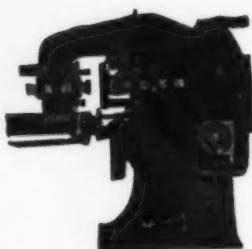
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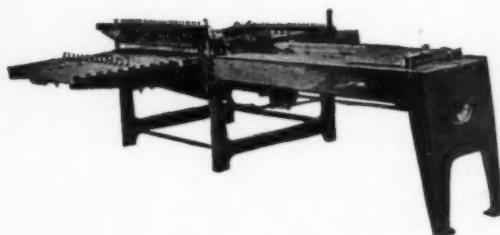
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"Maybe Cuthbert know what he's talking about when he say 'I'm sure gonna need a convoy!'"

...convoy needed!

WHAT a protecting destroyer is to a convoy, regular advertising can be to your firm and its products in these hectic and dangerous days . . . advertising can help you bring your firm and brands safely through so that after the war, they will be among the living, and not memories of yesteryear.

If you want your firm and brand names "convoyed" to best advantage during 1943 in the field of soap products, insecticides, disinfectants, and allied sanitary and chemical specialties, we suggest regular advertising in

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Tale Ends

LOOKS like the war is starting to close in on the soap industry in a serious way these days! Tallow and grease continue scarce. Producers of cottonseed soap stock don't want to sell. No edible oils to be used in soap. More fats, oils and soaps to go on Lend-Lease in 1943. Yes, sir, the war is closing in on us!

* * *

Prediction — As the "confidential" news letters from Washington would say it,—get ready to see white soaps put off the market during 1943 or at least to see their tonnage materially curtailed.

* * *

Getting back to cottonseed oil, —usually cotton oil, foots and stock are plentiful at this time of the year. But this year, producers are waiting for OPA to raise price ceilings,—or at least make a decision. Splitters can't buy foots or stock, and soap powder manufacturers can't buy fatty acids. It's a great state of affairs, men,—a fine state of affairs!

* * *

And speaking of OPA., we note that they have just fixed ceiling prices for frankfurters and bologna. Well, maybe the price of bologna is now fixed, but the supply of this commodity in Washington, D. C. seems to be increasing steadily.

* * *

Some primal termite knocked on wood
And tasted it and found it good.
And that is why your Cousin May
Fell through the parlor floor today.

Ogden Nash is the author and its title is "The Termite," says *Rutgers Alumni Monthly*. Didn't some P.C.O. use this in an ad not too long ago?

* * *

And so that you will not miss this column of keen wit and sparkling brilliance next month and thereafter, don't forget to send in your check when you receive a subscription renewal bill.



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We have a job to do. A healthy industry behind a healthy war effort is going to accomplish the final Victory.

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